A PROJECT ON OSHADHI KOSHA





Kalpatharu Research Academy Publication
Chief Editor: Daivajna K.N. Somayaji

VṚKSHĀYURVEDA

(Excerpt from Śārṅgadhara-Saṁhitā)

Edited by

Prof. S.K. RAMACHANDRA RAO.

KALPATHARU RESEARCH ACADEMY
POST BOX NO. 1857, BANGALORE - 560 018
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PREFACE

The Kalpatharu Research Academy, Bangalore, has launched on a new project entitled 'Oshadhi Kosha'. It relates to the traditional wisdom concerning the medicinal uses of plants and trees. A glossary of medicinal plants, which is not only illustrated but authentic, has also been planned; the valuable section which deals with the care and uses of plants in the well-known compendium, Śārṅgadhara-Paddhati, (sometimes also called Śārṅgadhara-Saṁhitā) has been edited and printed here, with translation in English by Vidyālankāra Prof. S.K.Rāmachandra Rao.

The subject of Āyurveda is well within the area of specialization chosen by the Kalpatharu Research Academy; and some books on the subject have already been published. Āyurveda has been of immense importance in Indian culture; and the Academy, committed as it is for the recovery and preservation of the significant aspects of our culture, has planned publications of source-materials of Ayurveda, relating to medicinal herbs, pharmaceutical preparations, theoretical considerations and therapeutic details.

The present publication deals not only with the plants and trees recognised in Ayurveda for medicinal purposes, but also with the plants and trees which are fit for private gardens and public parks. The work in this sense is an unusual one, while also being highly useful.

It has been brought out after our scholars have carefully edited the text, amended the existing English translation and added a valuable introduction.

We are grateful to Vidyālankāra Prof.S.K.Ramachandra Rao the well-known authority in Indological subjects and Shri Yellappa Reddy, Chief Conservator of Forests, Government of Karnataka, for having kindly prepared the matter for publication.

We also acknowledge the assistance provided by Dr. R.K.Perthy, Director General, National Archives of India, New Delhi.

The Payonidhi printers is to be thanked for having expedited the printing of this work.

14-April-93.
Soura-Ugadi.
Bangalore.

Daivajna K.N. Somayaji
Chief Editor and Director,
KALPATHARU RESEARCH ACADEMY

INTRODUCTION

The Indian Research Institute of Calcutta undertook to publish ancient and medieval texts pertaining to what it called "Indian positive Sciences". As its first publication appeared a Sanskrit treatise on Arbori-horticulture, *Upavana-vinoda* in 1935. The text was Śārṅgadhāra's encyclopaedic work on this subject. The renowned scholar Brajendra Nath seal, in the course of his Foreword to this book, pointed out that "Mere religion or theology was not the pre-occupation of the Hindu mind" and that the subject of Vṛkshāyurveda "became prevalent as a distinct branch of postive knowledge as early as the Artha-śāstra of Kauṭilya expressly referring to it". The effort of the Calcutta Institute to bring to the notice of scholars and scientists this important text is undoubtedly laudable. And the Institute also got the text translated into English by an eminent botanist, Prof. Girija Prasanna Majumdar (who headed the department of Botany in Presidency College, Calcutta),who also wrote an elaborate introduction to the subject. The publication was an eye-opener. It was informative and pioneering.

However, the text as printed in this book was brimming with errors, and many of the readings were not proper. And the translation, although accurate for the most part, was involved in its diction and was defective in some places. A perusal of the text and translation left me and many of my colleagues rather dissatisfied. A revised edition of the text was obviously indicated. This has been done in the present publication. The translation of Prof. Girija Prasanna Majumdar, was a labour of love and was acquainted with the sincerity, expert knowledge and unbounded zeal of the learned professor. An altogether new translation was

threrfore, nor indicated: his good work was not so easily to be dismissed. It was decided that the translation of Prof. Majumdar was to be retained but edited wherever neccessary.The introduction of the Calcutta edition describes Śārṅgadhara, the author of the Original text, as a courtier of King Hammira of Śākaṁbharideśa (modern Bundelkhand) who flourished in the thirteenth century A.D (1283-1301). But research has shown that the compiler of this Paddhati or Saṁhitā known after Śārgadhara was the son of Dāmodara, who was in turn the son of Rāghava, who was himself one of the sons of King Hammīra (cf. P. Peterson, ed. in Bombay Sanskrit Series; and M. Krishṇamāchariar, *History of Classical Sanskrit Literature,* Madras 1937, p. 386). The Paddhati that he compiled (consiste of 4689 verses) has been ascribed to 1363 A.D.

The work is little more than a mere compilation of relevant material from different classical sources. But it is encyclopaedic in its nature, and almost exhaustive in its treatment. The matter pertaining to Vṛkshāyurveda has been collected from numerous text-books of Vṛkshāyurveda, as the text itself includes a references:'nānā-vṛkshāyurveda śāstrebhyah'. This makes it clear that there were many works in Sanskrit bearing on this subject, which were available even in the fourteenth century. Unfortunately, barring a very small number of short texts this corpus has been lost to us.

I am grateful to the late Prof. Girija Prasanna Majumdar, whose translation has been reproduced here almost in its original shape, and to the Late Sjt. Satish Chandra Seal, the founder-Secretary of the Indian Research Institute, Calcutta, who published the translation for the first time. My thanks are due to my friend, Shri A.N. Yellappa Reddy, Special Secretary to the Government of Karnataka (department of Ecology and Environment) who not only procured a copy of the Calcutta edition for me but undertook to provide modern scientific equivalents for the names of plants

given at the end of the Calcutta publication (many of which were incorrect or outdated).

As in the other publications of the Academy Shri Daivajna K.Somayaji merits our gratitude for having agreed to include this important book in his series of books which are meant to highlight the acheivements of the ancient Indian genius. The printers have done a good job in producing this book.

S. K. Ramachandra Rao.

शार्ङ्गधर पद्धतौ

अथ वृक्षायुर्वेदः ॥

ART OF ENJOYMENT BY GARDENING

पुसां सर्वसुखैकसाधनफलाः सौन्दर्य्यगर्वोद्धुर -
क्रीडालोलविलासिनीजनमनः स्फीतप्रमोदावहाः ।
गुञ्जद्भृङ्गविनिद्रपङ्कजभरस्फारोल्लसद्दीर्घिका -
युक्ताः सन्ति गृहेषु यस्य विपुलारामाः स पृथ्वीपतिः ॥१॥

He is indeed a monarch if his house has extensive gardens, spacious, gardens containing large pools of water with lovely lotus blossoms over which humming bees fly:that may be regarded as the consummation of all happiness on the part of men, and that give intense pleasure to the mind of sportive and pleasure-seeking ladies puffed up with the pride of beauty. **(1)**

नवं मनोहारि वपुर्वराङ्गनाः
सखा कलावित्कलवल्लकीस्वनः ।
धनानि सर्वं विफलं सुखैषिणो
विना विहारोपवनानि भूपतेः ॥२॥

If pleasure-seeking sovereigns have no gardens wherein to seek pleasure, the delicate and fine bodily form, bevy of fair and youthful ladies, compeers excelling in pleasing arts and sonorous lutes and profusion of wealth, all these are useless. **(2)**

शास्त्राणि तावदवलोक्य मया मुनीना-

मर्थः स एव गदितः परमार्थयुक्त्या।
एवं विलोक्य निखिलं च विचारयन्तः
सन्तः स्वभावसरला मुदमाप्नुवन्तु ॥३॥

I am expounding in detail that subject after a thorough study of the treatises compiled by the sages of old. May the noble-minded and upright readers find delight in going through it, and judging it as whole (for what it is worth). **(3)**

अथ तरुमहिमा।

THE GLORY OF TREES

बहुभिर्बत किं जातैः पुत्रैर्धर्मार्थवर्जितैः।
वरमेकः पथि तरुर्यत्र विश्रमते जनः ॥४॥

Better to have a tree (planted) by the wayside where many rest under its shade, than to have many sons born who are devoid of wealth and virtue. **(4)**

दशकूपसमा वापी दशवापीसमो ह्रदः।
दशह्रदसमः पुत्रो दशपुत्रसमो द्रुमः ॥५॥

We read in the Śastras that excavation of a pond is equivalent (in virtues) to sinking of ten wells, a lake is equivalent to ten ponds, and a son is equivalent to ten such lakes; and a tree is as good as ten sons. **(5)**

क्रीडारामं तु यः कुर्याद्द्रुमफलसंयुतम्।
स गच्छेच्छंकरपुरं वसेत्तत्र युगत्रयम् ॥६॥

He, who for pleasure makes him a good garden full of fruit and flower trees, is destined to go to the abode of Śiva and reside there for as many as three aeons. **(6)**

एतत्सर्वं परिज्ञाय वृक्षारोपं समाचरेत्।
धर्मार्थकाममोक्षाणां द्रुमेभ्यः साधनं यतः ॥७॥

One should plant trees with full knowledge of these particulars, in as much as from trees proceed virtues, material prosperity, fulfilment of desires and salvation - all these four sovereign things. (7)

यावद्दिनानि तुलसी रोपिता यद्गृहे वसेत् ।
तावद्वर्षसहस्राणि वैकुण्ठे महीयते ॥८॥

A man is sure to reside in Vaikuṇṭha (the abode of Vishṇu) for as many thousand years as there are Basil plants planted in his house. (8)

यस्तु संरोपयेद्बिल्वं शङ्करं प्रीतिकारकम् ।
तत्कुलेपि सदा लक्ष्मीः संतिष्टेत पुत्रपौत्रिकी ॥९॥

Lakshmi (the Goddess of Wealth) lives for generations in the house of one who plant the Bilva tree peculiarly favourite with Śiva. (9)

एवमेव हि योऽश्वत्थं गोपयेद्विधिना नरः ।
यत्र कुत्रापि वा स्थाने गच्छेत्स भवनं हरेः ॥१०॥

He who plants Aśvattha trees after a proper method no matter where, goes to the abode of Vishṇu. (10)

तेनेष्टा बहवो यज्ञास्तेन दत्ता वसुन्धरा ।
स सदा ब्रह्मचारी स्याद्येन धात्री प्ररोपिता ॥११॥

He, who plants the Āmalaka trees, reaps the fruit of constant asceticism, the giving of earth and of many sacrifics (yajña). (11)

वटवृक्षद्वयं मर्त्यो रोपयेद्यो यथाविधि ।
शिवलोके वसेत्सोपि सेवितस्त्वप्सरोगणैः ॥१२॥

He, who plants after a proper method two Banyan trees, goes to the abode of Śiva, and is waited on by the seraphim. (12)

निम्बत्रयं समारोप्य नयो धर्मविचक्षणाः ।
सूर्य्यलोकं समासाद्य वसेदब्दायुतत्रयम् ॥१३॥

The virtuous man who plants three Nimba trees attains to the abode of the Sun and stays there for three thousand years. **(13)**

चतुर्णां प्लक्षवृक्षाणां रोपणान्नात्र संशयः ॥
राजसूयस्य यज्ञस्य फलं प्राप्नोति मानवः ॥१४॥

There can be no doubt of the fact that the man who plants four Plakṣa trees enjoys the fruits of a Rajasuya sacrifice. **(14)**

पञ्चाम्रान्रोपयेद्यस्तु मार्गेषूपवनेषु च ।
भूतान्भविष्यान्पुरुषांस्तारयेत्स चतुर्दश ॥१५॥

He, who plants five Āmra trees by the wayside or in the garden, secures the salvation of fourteen generations past and future, backward and forward. **(15)**

शिरीषशाखिनां षण्णां यः कुर्यात्त्रतिरोपणाम् ।
गारुडं लोकमासाद्य मोदते देववत्सदा ॥१६॥

He, who plants six Śirisa trees by the wayside, attains to the abode of Garuḍa and spends his days there in as much pleasure as the gods do. **(16)**

पलाशशाखिनः सप्त गोपयदेकमेव वा।
ब्रह्मलोकमवाप्नोति पूज्यते चामरोत्तमैः ॥१७॥

The man who plants either seven or even one Palāśa tree, gets to the abode of Brahma and is waited upon there by the best of gods. **(17)**

उदुम्वरद्रुमानष्टौ रोपयेत्स्वयमेव यः ॥
प्रेरयेद्रोपणायापि चन्द्रलोके स मोदते ॥१८॥

He, who plants eight Udumbara trees himself or gets them planted by others, reaches the abode of the Moon and enjoys intensity of pleasure there. **(18)**

पार्वती तोषिता तेन स भवेच्च निरामयः ।
पूजिता देवताः सर्वाः मधूको येन रोपितः ॥१९॥

He, who plants a Madhūka tree, becomes free from all diseases, and by him all the gods,especially, the goddess Pārvati, is pleased or gratified. (19)

क्षीरिकाकदलीद्राक्षाप्रियालपनसान्वितान् ।
तरून्संरोप्य नो दुःखी जायते सप्तजन्मसु ॥२०॥

He, who plants a tree along with any of these trees: Kshīrika, Kadali, Drakṣa, Piyala, Panasa, etc., ensures himself against all diseases for seven lives (births) to come. (20)

अज्ञानाज्ज्ञानतो वापि जम्बूर्येन प्ररोपिता।
गृहेऽपि वसन्नित्यमति धर्मेण युज्यते ॥२१॥

He, who plants trees capable of bearing fruits and flowers besides those that have already been mentioned enjoys the fruits of virtue in his own house every day. (21)

अन्यानपि तरूण्यारोप्य फलपुष्पोपयोगिनः ।
रत्नधेनुसहस्रस्य फलं प्राप्नोति मानवः ॥२२॥

He, who plants trees capable of bearing fruits and flowers besides those that have already been mentioned enjoys the fruits of the gift of one thousand cows of gold. (22)

अश्वत्थमेकं पिचुमन्दमेकं ।
न्यग्रोधमेकं दशचिञ्चिणीकाः
कपित्थबिल्वामलकत्रयं च
पञ्चाम्रावपि नरकं न पश्यति ॥२३॥

He, who plants Asvattha, Pichumanda, Nyagrodha, one each; ten Tamarind trees, and Kapittha, Vilva and Āmalaka, three each, and five mango trees, is never fated to see hell. (23)

अथ निवासासन्नतरुशुभाशुभलक्षणानि।

THE GOOD AND EVIL OMENS RELATING TO RESIDENCE NEAR TREES

गृहस्य पूर्वदिग्भागे न्यग्रोधः सर्वकामिकः।
उदुम्बरस्तथा याम्ये वारुण्यां पिप्पलः शुभः।
प्लक्षश्चोत्तरतो धन्यो विपरीतांस्तु वर्जयेत् ॥२४॥

The presence of Banyan tree in the east of a house means fulfillment of all desires, and Udumbara tree in the south, Pippala in the west and Plaksha in the north are productive of good; everything else is to be strictly forbidden. (24)

वर्जयेत्पूर्वतोऽश्वत्थं प्लक्षं दक्षिणातो गृहात्।
पश्चिमे चैव न्यग्रोधं तथोदुम्बरमुत्तरे ॥२५॥

One should do well to avoid Aśvattha tree in the east of a house Plaksha tree in the south, Banyan tree in the west and Uduṁbara in the north. (25)

देवदानवगन्धर्वाः किंनरोरगराक्षसाः ॥
पशुपक्षिमनुष्याश्च संश्रयन्ति सदा तरून् ॥२६॥

For this simple reason that gods and demons and semi-celestial beings, gandharvas and kinnaras, snakes and voracious demons, beasts and birds and men, – all these have recourse to trees or take shelter under them. (26)

सर्वेषां वृक्षजातीनां छाया वर्ज्या गृहे सदा।
ापि सौवर्णकं वृक्षं गृहद्वारे न रोपयेत् ॥२७॥

Hence one should do well to avoid the shades of all trees in one's house; one should not plant in front of one's house a tree even if it is made of gold. (27)

बदरी कदली चैव दाडिमी बीजपूरकन्।

प्ररोहन्ति गृहे यस्य तद्गृहं न प्ररोहति ॥२८॥

Children do not multiply in the house of a man wherein germinate (grow) Badari, Kadali, Dadima and Bijapuraka. **(28)**

पलाशाः काञ्चनाराश्च तथा श्लेश्मातकार्जुनाः ।
करञ्जाश्चेत्यमी वृक्षा न रोप्याः सुखिना गृहे ॥२९॥

A man desirous of happiness should not plant in his house Palāśa, Kañchana, Śleṣmāntaka, Arjuna and Karañnja, all these five trees. **(29)**

आसन्नाः कण्टकिनो रिपुभयदाः क्षीरिणोर्थनाशाय ।
फलिनः प्रजाक्षयकरा दारूण्यपि वर्जयेत्तेषाम् ॥३०॥

A thorny plant nearby is productive of danger from enemies, and the proximity of a Kshiri-vṛksa causes loss of wealth and a fruiting thorny tree which is also milky leads to loss of human lives; one should do well to avoid even the very good of these trees. **(30)**

नीलीं हरिद्रां च नरः सदोप्त्वा
पुत्रैर्धनैश्च क्षयमभ्युपेयात् ।
एतास्तु सर्वाः स्वयमेव जाता-
श्छिन्द्यादृषीणां वचनाद्विधिज्ञः ॥३१॥

If one plants Nili and Haridrā, one is destined to be ruined himself together with his sons and all his wealth. If these trees grow even of themselves the persons versed in the laws should cut them off in accordance with the sayings of the Sages. **(31)**

न कुर्युर्याम्यनैऋत्याग्नेयष्वपि हि वाटिकाम् ।
अन्यथा कलहोद्वेगौ कष्टं वा लभते भृशम् ॥३२॥

One should never make a garden in the nairṛt or agni corner of one's house; if one does so, distress and sorrow will be the outcome. **(32)**

तस्माद्राक्षा हि शुभदं पुत्रसंनिधिवर्धनम् ।
पश्चिमोत्तरपूर्वेषु भवेदुपवनं कृतम् ॥३३॥

If one lays out a garden in the north or in the west of one's house, one's children and grandchildren multiply; hence a landlord, i.e., the proprietor of a house, should make gardens after these rules. (33)

THE SELECTION OF SOILS

अथ भूमिनिरूपणम् ।

जाङ्गलानूपसामान्यस्वभावापि च मेदिनी ।
भेदैः सा भिद्यते षडभिर्वर्णतो रसतस्तथा ॥३४॥

Three main types of soil, viz. Jāṅgala (barren), Anūpa (moist) and Sāmānya (ordinary) are divided into six on the basis of colour and taste. (34)

असितविपाण्डुश्यामललोहितसितपीतरोचिषः क्रमशः ।
मधुराम्ललवणतिक्तककटुककषाया भुवो रसतः ॥३५॥

Soils having black, pale (shady), blue, red, yellow, and white colour or appearance are respectively associated with sweet, acid, salty, sour, bitter and pungent tastes. (35)

विषपाषाणवल्मीकबिलदुष्टा तथोषरा ।
दूरोदका शर्करिला तरुभ्यो न हिता मही ॥३६॥

The soils that are poisonous, or stony, or full of anthills, or barren, or full of gravels, and that which still remain uneven even when ploughed, or that which has water hidden in its depths are not favourable to the growth of trees. (36)

इन्द्रनीलशुकपक्षकोमला
शङ्खकुन्दकुमुदेन्दुसंनिभा ।
तप्तकाञ्चनविकासिचम्पक-
स्पर्धिनी वसुमती प्रशस्यते ॥३७॥

Do well to know that the soil which has the brilliance of blue gems, that which is as soft as the feather of the Śuka-bird, that which is as white as the conch, the Kumuda flower, or the moon, and that which has the colour of melted gold or that of a blown Champaka flower, – all these are favourable to growth of trees. **(37)**

समा समासन्नजला हरित्तरूतृणाङ्करा ।
तस्यां सर्वे यथास्थानं प्ररोहन्ति महीरूहा: ॥३८॥

All kinds of trees flourish in the soil which is even, the soil near which there is water, and where the sprouts of trees put on green appearance. **(38)**

न जाङ्गला न चानूपा भूमि: साधारणा शुभा ।
तस्यां सर्वेपि तरव: प्ररोहन्ति न संशय: ॥३९॥

The soil, which is neither barren nor watery, may be said to be Ordinary, and there all types of plants grow. **(39)**

पनसलकुचतालीवंशजम्बीरजम्बू
तिलकवटकदम्बाम्रातकखर्जूरपूगा: ।
कदलीतिनिशमृद्वीकेतकीनालिकेर
प्रभृतय इति चान्ये प्रायशोनूपजा: स्यु: ॥४०॥

Panasa, Lakucha, Tāli, Vaṁśa, Jaṁbīra, Jaṁbū, Tilaka, Vaṭa, Kadaṁba, Āmrataka, Kharjūra, Pūga, Kadalī, Tiniśa, Mṛdvī, Ketaki and Nālikera, all these trees grow in Anupa soil. **(40)**

(शोभाञ्जनश्रीफलसप्तपर्णी
शेफालिकाशोकशमीकरीरा: ।
कर्कन्ध राकंचर निम्बशोका
वृद्धि लभन्ते भुवि जांगलायाम् ॥)
बीजपूरकपुंनागचम्पकाम्रातिमुक्तका: ।
प्रियंगुदाडिमाद्याश्च साधरणमसमुद्भवा: ॥४१॥

Bījapūraka, Punnāga, Champaka, Āmra, Atimuktaka, Priyangu, Daḍima and similar others, – all these trees grow in the ordinary soil. **(41)**

निधिदेवमहीपानां प्रभावाच्चातियन्ततः।

असात्म्यभूमिसंपन्ना अपि सिद्ध्यन्ति पादपाः ॥४२॥

The trees which do not ordinarily grow in a particular type of soil may do so if there is wealth hidden under it, or through the grace of gods, or through the grace of sovereigns. **(42)**

अथ पादपविवक्षा।

THE CLASSIFICATION AND PROPAGATION OF PLANTS

वनस्पतिद्रुमलतागुल्माः पादपजातयः

बीजात्काण्डात्तथा कन्दात्तज्जन्म त्रिविधं विदुः ॥४३॥

Plants are classified into trees, shrubs, creepers and herbs, and they propagate through seeds, cuttings, and bulbs. **(43)**

ते वनस्पतयः प्रोक्ता विना पुष्पैः फलन्ति ये।

द्रुमाश्च ते निगदिताः सहपुष्पैः फलन्ति ये ॥४४॥

The trees which produce fruits without flowers are called **Vanaspatis,** and those that spread themselves in several branches a little above the ground are called **Gulmas.** **(44)**

प्रसरन्ति प्रतानैर्यास्ता लताः परिकीर्त्तिताः।

बहुस्तम्बा विटपिनो ये ते गुल्माः प्रकीर्त्तिताः ॥४५॥

Those that spread themselves on the ground are called Latas and those that spread tlves in several branches a little about the ground are called Gulmas. **(45)**

जम्बूचम्पकपुंनागनागकेशर चिञ्चिणी।
कपित्थबदरीबिल्वकुम्भकारिप्रियङ्गवः॥४६॥
पनसाम्रमधूकाद्याः करमर्दाश्च बीजजाः।
ताम्बूली सिन्धुवारश्च तगराद्याश्च काण्डजाः॥४७॥

Do well to know that Jaṁbū, Chaṁpaka, Punnāga, Nāgakeśara, Chinchiṇi, Kapittha, Badari, Vilva, Kuṁbhakāri, Priyaṅgu, Panasa, Āṁra, Madhuka and the like, Karamarda and similar others grow out of seeds; and Taṁbuli, Sindhuvara, Tagara and such others grow out of kaṇḍa (portions of stems, i.e., cuttings). **(46-47)**

पाटलादाडिमीप्लक्षकरवीरवटादयः।
मल्लिकोदुम्बरः कुन्दौ बीजकाण्डोद्भवा मताः॥४८॥

And Pāṭala, Dāḍima, Plaksha, Karavira, Vaṭa and such others, Mallika, Uduṁbara, Kunda and others grow out of seeds and cuttings. **(48)**

कुङ्कुमार्द्र रसोनालुकन्दाः कन्दसमुद्भवाः।
एलापद्मोत्पलादीनि बीजकन्दोद्भवानि तु॥४९॥

Kuṁkuma, Ārdra, Rasona, Āluka, grow out of kānda (bulbs, and such other underground stems), and Elā, Padma, Utpala and such others grow both out of kaṇḍa and seeds. **(49)**

अथ बीजोप्तिविधिः ।

RULES FOR SOWING SEEDS

सम्यक्कृष्टे समे क्षेत्रे माषानुप्त्वा तिलस्तथा।
सुनिष्पन्नानपनयेत्तत्र बीजोप्तिरिष्यते॥५०॥

One should sow pulses and sesamum on a level ground after it has been thoroughly ploughed with a plough, and should cut the crops when they are ripe and then should sow seeds on that ground again at pleasure. **(50)**

अथर्तु पक्वात्फलतोवशोषिता-
न्विकृष्यबीजं पयसा निषिच्य।
विशोषितं पञ्चदिनानि सर्पिषा
विडङ्गमिश्रेण च धूपयेत्ततः ॥५१॥

First of all one should take well-matured seeds of fruits of the season, sprinkle milk and clarified butter over them, keep them for five days (in this condition), and then fumigate them with frankincense. Or, **(51)**

क्षीरनिषिक्तं बीजं बृहतीतिलभस्मसर्पिषा लिप्तम्।
गोमयमृदितमथोप्तं सद्यो जायेत धूपितं वसया ॥५२॥

One should besmear these seeds thus sprinkled with milk, with powders of Brhati and sesamum mixed with ghee, dry them and besmear them again with cowdung, and then fumigate with fat of some animal. If the seeds thus prepared are sown, they sprout in a single night. **(52)**

पयसि निषिक्तं बीजं गोमयपरिमर्द्दितं विशोष्य ततः।
माक्षिकविडङ्गचूर्णैर्बहुशो मृदितं प्रजायेत् ॥५३॥

After besmearing with cowdung the seeds sprinkled with milk, one should dry them and besmear them again many times with powers of Vidaṅga mixed with honey and sow them; and they will sprout very soon. **(53)**

जम्बूपनसचूतानां सरलं लकुचस्य च।
क्षीरसिक्तं वपेद्बीजं घृतगोविड् विडङ्गवत् ॥५४॥

The seeds of Jambū, Panasa, Chūta, Sarala, Lakucha should be treated with milk and sown with ghee, cowdung and Vidaṅga just mixed therewith. **(54)**

शुचिस्नातो बिभ्रद्वसनममलं पूजितसुरो
गुरुं नत्वा दत्वा वसु वसुमतीं वा गुणवते।

स्वयं बीजान्यादौ वपति कतिचिद्वास्तुपुरुषं
मनस्यन्त: कृत्वा तदनु परितोन्य: परिजन: ॥५५॥

A person (the master of the household) after taking ablution and putting on well-washed clothes, and after worshipping the gods, and making obeisance to his Guru (spiritual preceptor) and giving away earth or money to a qualified Brahmin, and making obeisance again to the presiding deity of foundation (Vastupurusha) should himself sow seeds. His attendants should follow suit. **(55)**

बीजधानीं तृणास्तीर्णां कृत्वा सिञ्चेत्पयोम्बुना ।
जाताङ्कुरां च सलिलैर्निस्तृणां शोषमानयेत् ॥५६॥

One should first of all sow seeds in the seed-bed, spread grass over it and sprinkle milk and water, and then when the seeds germinate remove the grass, dry the earth a little, and transplant these sprouts together with their roots and the earth attached thereto. **(56)**

अथ रोपणविधानम् ।

THE PROCESS OF PLANTING

अयथाविहितानां यन्मनोज्ञतासंपदौ नस्त: ।
कथयाम्यतस्तरूणां रोपबिधानं यथोद्दिष्टम् ॥५७॥

The process of planting trees is being laid down, because the trees when planted irregularly lose their beauty and vigour. **(57)**

ध्रुवमृदुमूलविशाखागुरुभं श्रवणस्तथाश्विनी हस्त: ।
उक्तानि दिव्यदृग्भि: पादपसंरोपणे भानि ॥५८॥

Dhruva (Rohiṇi, Uttaraphalguṇi, Uttarāshaḍha and Uttarabhadrapada), Mṛdula (Chitra, Anuradha, Mṛgaśira and Revati), Mula, Viśakha, Pushya, Śravana, Aśvini and Hasta- all these constellations are characterised as mild, and they are favourable to the planting of trees according to the sages. **(58)**

हस्त प्रमाणान् पयसा सुसिक्तान्
संक्रामयेन्मूलवहः समृत्कान् ।
सर्पिर्मधूशीर बिडङ्गलिप्ता-
न्बिले निदध्याच्च करीषयुक्ते ॥५६॥

When a sprout planted after being sprinkled with milk grows one cubit in length, one should dig it out together with the earth attached thereto and then apply to it roots of Uśira, Viḍanga and ghee pasted together and then replant it in a pit together with cowdung. **(59)**

अवालुकाश्लक्ष्णमृदा पूरिते गर्त्तशोधनम् ।
कोदण्डार्धमिते खाते जलसिक्ते वपेत्तरुम् ।
कदलीक्षीरिणौ रोप्यौ मूले दत्त्वा तु गोमयम् ॥६०॥

One should plant a tree (seedling) in a pit two cubits in depth, well watered, filled with fine dusts of earth free from sands, and filled with cowdung, Plantain sprouts and kshīri (withmilky sap) trees should be planted after applying only cowdung to the roots. **(60)**

रम्भायाः सुपरिणतैः फलैर्विलिप्तां
संशुष्कां भुवि निहितां पलालरज्जुम् ।
शुद्धायामुपरि तृणेन गाढगुप्ता-
मासिञ्चेदबहुजलैर्बहून्यहानि ॥६१॥

First of all one should plant and besmear a long straw rope with this paste thus prepared) then put the rope (thus treated with banana paste) down in the ground lengthwise. Then for a long number of days one should go on sprinkling water upon it little by little. **(61)**

सा रज्जूस्तदनु तमालनीलभासो
बिभ्राणानरुणरुचोङ्कुरान् प्रसूते ।
भूयस्तानुपचितपत्रकाण्डमूला-
नारोप्य प्रथितविधानतो निषिञ्चेत् ॥६२॥

Then, sprouts having bluish and reddish appearance like the fresh Tamala tree will sprout out of that rope; and then when by degrees branches, leaves and roots will become visibly manifest, one should plant these sprouts, elsewhere and sprinkle water upon them. (62)

आषाढे श्रावणे मासि बीजावपनरोपणे।

ग्रीष्मादन्यत्र वल्लीनां केचिदिच्छन्ति रोपणम् ॥६३॥

Seeds (of trees and other garden plants) should be sown during the months of Āṣāḍha and Śravaṇa; and some opine that they may be sown in any season of the year, except in summer. (63)

मण्डपनन्द्यावर्त्त स्वस्तिकचतुरस्रसर्वतोभद्रैः।

वीथीनिकुञ्जपुञ्जकविन्यासैः पादपा रोप्याः ॥६४॥

One should lay out the trees in the garden so as to look like an altar, a nandyavarta, a swastika, a chaturasra, a sarvatobhadra, a vithi (avenue lined with trees), a nikuñja (grove-bower), and in clusters (here and there). (64)

दशविंशतिषोडशभिस्तु करै-

रधरोत्तरमध्यकृतान्तरकान्।

द्विचतुस्त्रिभिरन्तरितान् क्रमश-

स्तृणपादपगुल्मभृतश्च वपेत् ॥६५॥

One should plant trees at an interval of 10 cubits in the lower level of the garden, and at 20 cubits in the higher and at 16 cubits in the middle; but if the surface of the garden be plane one should plant grass-like plants at an interval of 2 cubits, trees at 4, and gulmas at 3 cubits apart. (65)

सान्द्ररोपणमवृद्धिकारणं

वातभीतिरतिदूररोपणात्।

भिन्नवर्गरचनाल्पपीडना

नैव युक्तिरियमेव शस्यते ॥६६॥

Trees, if thickly sown, are hindered in their growth and, if sown very sparsely, they are in danger of falling down even in consequence of mild winds; hence for lean plants, in the laying out a garden, planting after the method described above is wise. **(66)**

कुसुमं फलमप्युपभोगसहं
फलिनो हि न यस्य दलन्ति शिखाः।
कुसुमेन विनैव फलन्ति च ये
न भवन्ति शुभास्त इह ते पनसाः॥६७॥

The trees the fruits and flowers whereof are not enjoyable by men, the upper parts whereof drop off, which produce fruits without producing flowers, are regarded as inauspicious in the Śāstras; jackfruit tree is an example. **(67)**

मातुलुङ्गरजनी सकण्टकः
किंशुकश्च गिरिकर्णिका सिता।
तिन्त्रिणीकविफलाक्षनीलिकाः।
कोविदार इति भीतिदो गणः॥६८॥

Mātuluṅga, Rajanī, thorny plants, Kiṁśuka, Girikarṇikā, Aśitā, Tiṅtiḍī, Viphalākṣa, Nīlika, Kovidāra, are productive of danger. **(68)**

फलिन्यशोकपुंनागशिरीषनिम्बचम्पकाः।
मङ्गल्याः प्रथमं रोप्या भल्लातश्च गदापहः॥६९॥

A fruiting tree, Aśoka, Punnāga, Śirīṣa, Niṁba and Champaka are conducive to welfare and should be planted before all. Do well to know that Bhallātaka is productive of diseases. **(69)**

पूर्वस्यां करमर्दवंशविटपाः पारावता दक्षिणे
कौबेर्यां बदरी कपित्थतरवो धात्री च पश्चाच्छिवा।
अन्ये चोत्तममध्यमाधमशिफा रोप्याः स्ववर्गैः समं
कृत्वा चान्तरकं यथायथममी पत्रैरुपर्यस्पृशः॥७०॥

One should plant Karamarda and Bamboo in the east of a garden, Parāvata in the south, Vadan and Kapittha in the north, and Dhātri in the west. One should plant trees with an eye to the fact that there is room for the spread of their roots and one must see that the leaves of each other do not touch. (70)

अथ निषेचनविधिः ।

RULES FOR WATERING THE PLANTS

सर्वस्यापि नवोप्तस्य सायंप्रातर्निषेचनम् ।
शीतातपसमीरेभ्यो रक्षेच्च सुविधानतः ॥७१॥

One should water the newly planted trees both in the morning and evening, and should systematically protect them against cold, stress and wind. (71)

हेमन्ते शिशिरे देयं जलं चैकान्तरे दिने ।
वसन्ते प्रत्यहं ग्रीष्मे सायंप्रातर्निषेचनम् ॥७२॥

One should water them every alternate day in autumn and in winter; every day in spring, and twice a day during the summer, i.e., once in the morning and once in the afternoon. (72)

वर्षासु च शरत्काले यदा वृष्टिर्न दृश्यते ।
तदा देयं जलं तज्ज्ञैरालवाले महीरुहाम् ॥७३॥

During the rainy and autumnal seasons when it does not rain one should fill the circular ditch under the tree with water. (73)

वारिणा यावता यस्य मूले सौहित्यमिष्यते ।
तावत्तस्य तरोर्देयं किं घटार्थविवक्षया ॥७४॥

One should go on applying water till the earth attached to the roots of the tree becomes wet: one should not measure the quantity of water applied for this purpose. (74)

आलवाले स्थितं तोयं शोषं न भजते यदा।
अजीर्णं तद्विजानीयान्न देयं तादृशे जलम् ॥७५॥

Trees suffer from indigestion if the water in the ditches is not dried up, hence one should not pour fresh water in it till such is the case. (75)

समीपजातं यत्नेन तृणगुल्मलतादिकम्।
स्फोटनीयं विधिज्ञेन द्रुमानां वृद्धिमिच्छता ॥७६॥

A person versed in the principles of gardening should not hesitate, in the interest of trees, to extirpate the weeds, creepers and shrubs which grow beside them. (76)

अथ द्रुमरक्षा।

RULES FOR THE PROTECTION OF TREES

नीहाराच्चण्डवाताच्च धूमाद्वैश्वानरादपि।
जालकारात् प्रयत्नेन रक्षणीया: क्षमारुहा: ॥७७॥

One should carefully protect trees against (destructive influence of) dew, strong wind, smoke, fire and spiders. (77)

पंक्तिमध्ये तु सुफला बाह्ये तत्परोत्वरे।
वृक्षा: कार्या युतावृत्या सा चापि परिखायुता ॥७८॥

Trees blessed with fruits should be placed in the middle of the row of trees; and others outside; all trees should be well protected with walls having ditches around them. **(78)**

विद्युदाहतवृक्षस्य भूमिमादाय सर्वत: ।
रक्षार्थे विकिरेदेषां तया न हिमबाधनम् ।
दीप्तोप्यग्नि: शमं याति वज्रदग्धद्रुभस्मना ॥७९॥

One should take up the ashes of trees struck by lightning, throw the same round other trees and this will ensure the latter against cold. These have the power to allay (extinguish) even the burning fire. **(79)**

सितशाल्योदनं दध्ना सैन्धवेन युतं वने ।
क्षेपणीयं च परितो गराणां वृष्टिवारणम् ॥८०॥

Throwing boiled Śāli rice of white variety mixed with curd and rock–salt round the trees ensures their protection against poisonous (viz. harmful) rain . **(80)**

शलभाखुपतङ्गानं पिपील्यादेर्भये सति ।
अष्टोत्तरशतं जप्त्वा मन्त्रं पत्रे ततो लिखेत् ॥८१॥

If one apprehends danger from mice, locusts, ants etc., one should utter the following formula (mantra) 108 times, and write it down on the leaf of a tree:

Om svasti. Kiskindhāsthita prakaṭaparākramāntarhitārka-maṇḍalopajīvitasya Śrīhanumānajñāpayati mūshakapataṅga-pipīlikaśalabhakarabhanvakakītagandhikānivahairna sthāta-vyam.
Ajñāmatikramāmaṇasya śarīranigrahah samāvartayati.
Tasyavānarasimhasyakramamānasyasāgaram.
Kakshāntaragato vātah jīmūta iva garjati.
Huṁ phaṭ namah. **(81)**

मन्त्र: । ॐ स्वस्ति
किष्किन्धास्थितप्रकटपराक्रमान्तर्हितार्कमण्डलोपजीवितस्य

श्रीहनुमानाज्ञापयति

मूषकपतङ्गपिपीलिकाशलभकरभान्वककीटगन्धिकानिवहैर्नस्थातव्यम्। आज्ञामतिक्रममाणस्य शरीरनिग्रहः समावर्त्तयति ।। तस्य वानरसिंहस्य प्लवमानस्य सागरम्। कक्षान्तरगतो वायुर्जीमूत इव गर्जति।। हूं फट् नमः।।

पत्रे मनुं समालिख्य जप्त्वा तं निखनेद्भुवि ।

क्षेत्रे कीटपतङ्गाखुपिपील्यादिर्विनश्यति ।।८२।।

And after writing down the (above) formula on the leaf and powdering it one should bury it in the ground under the tree. This will look to the destruction of locusts, mice and ants of the field. **(82)**

अथोपवनप्रक्रिया ।

CONSTRUCTION OF A GARDEN

घनप्रवालस्थगितातपानि
विकीर्णपुष्पाणि समीरणेन ।
गृहाणि कुर्यादतिमुक्तकानां
लताभिरालोल मधुव्रताभिः ॥८३॥

One should construct garden-houses in a place where the sun's rays are prevented by a canopy of newly grown leaves, which is adorned with blooming flowers, rocked by breezes and covered with Mādhavī creepers bristling with restless black bees. **(83)**

स्थानेष्वपरेषु तथा पादपयुगलेषु मिथुनसंवाह्याः ।
शाखावलम्बिनीभिर्दोलाः कार्या लताभिश्च ॥८४॥

There one should make a swing out of the strong creepers attached to the branches of two trees, fit for a couple to sit on. **(84)**

तरुविटपलतानिकुञ्जरम्या
विरचितकेन्द्ररसानुगण्डशैला ।
विविधमणिगुहा विचित्रधातुः ।
क्वचिदपि पर्वतिका विहारहेतुः ॥८५॥

In some places within the garden one should, for the purpose of enjoyment, make (artificially) a nice, beautiful or lovely cave adorned with branches of trees, leaves and creepers; or artificial peaks situated on a mound covered with trees, or a variety of caves associated with a good many gems and precious stones brought from mountains; or many artificial mountains adorned with metals of different colours. **(85)**

केकानिनादसुभगाः सदासंत्रासिताहयः।
ताण्डवेन तदुद्देशान्मण्डयन्ति शिखण्डिनः ॥८६॥

And there for the purpose of preventing fear from snakes as well as for the display of beautiful dance one should keep peacocks. (86)

मन्त्रः विलम्बिनो यत्र तटद्रुमा वपु-
र्विलोकयन्ति प्रसवेक्षणैरिव।
समं दिशन्तः फलहंसभूषणा
क्वचिद्भवेत्पुष्करिणी मनोरमा ॥८७॥

In places one should dig ponds, the rows of trees on the bank of which will mistake their own shadows reflected in the water for their own bodies.

[Editor – The original text gives here a mantra, of which the above is not the translation. I do not know how this translation has come here.] (87)

निर्यादः सलिलां सुखावतरणां तीरेषु पुष्पद्रुमां
कूजद्वक्षविहङ्गमां सतरणीमित्यायतां दीर्घिकाम्।
कुर्यात्तत्र समुल्लसत्कमलिनीपत्राङ्कुरश्यामलां
श्यामालोचनमल्लिकां विदधतीं नीलोत्पलानि क्वचित् ॥८८॥

Steps should be constructed (for the ponds) in places whereby men can descend with ease into the vast artificial lake with pleasure boats in it, and on all sides of the steps flower trees should be planted; and care should always be taken to see that ferocious animals do not live in the water of that beautiful lake, and that the lake is always tenanted by birds like swans. Attempt should be made to intensity the beauty of the lake by having flowers of various colours, like lotuses, mallikā, blue lotus, etc, in different places of it. (88)

उपवनमिव वारिमध्यमग्नं
विमलतया प्रतिबिम्बितं दधाना।

शशिकरनिकरेण पूरिते च
क्वचिदुपनेयपयाः सुखाय वापी ॥८९॥

In places one should construct artificial lakes with such eye-delighting water in it that the reflection of the moon-beams in it causes the illusion of a garden in water. (89)

मध्ये तस्मिन् शिशिरशिखरिस्पर्धि वेश्म प्रवातं
गूढोपान्तं सुरभिकुसुमैः शाखिभिर्नम्रशाखैः।
स्थाने स्थाने स्फटिकधवलं मण्डपं मण्डनार्हं
कुर्यात्कस्मिन्नपि च कदलीमन्दिरं मन्दवायुः ॥९०॥

One should plant trees bent down under the weight of sweet flowers on all sides of the white and well ventilated houses, houses as white as the peak of the Himalayas, built inside the artificial lake referred to above. And in places of the garden one should construct circular seats as white as marble, and should make bowers of plantain trees in places where there is gentle breeze. (90)

क्वचिदप कूपं कुर्यादुपवनदेशे सुमृष्टसलिलभरम्।
संसिक्तसकलविटपं बद्धं पाषाणसंचयैः परितः ॥९१॥

In places of the garden deep wells, paved on all sides with stones with sweet water in it, should be dug with the water of which all the trees of the pleasure garden may be well watered. (91)

अञ्जनमुस्तोशीरैः सनागकोशातकामलकचूर्णैः।
कतकफलसमायुक्तैः कूपे योगः प्रदातव्यः ॥९२॥
कलुषं कटुकं लवणं विरसं
सलिलं यदि वाशुभगन्धि भवेत्।
तदनेन भवत्यमलं सुरसं
ससुगन्धिगुणैरपरैश्च युतम् ॥९३॥

If the water of the well be polluted and becomes pungent, bitter and tasteless, salty or malodorous, Añjana Musta, Jśira, Nāgakeśara, Koṣātaka, powdered Āmalaka together with Katakaphala should be thrown into it; and this will make the foul water transparent, tasteful and fragrant, and in addition will confer on it many other good qualities. **(92-93)**

अथ कूपार्थं भूमिपरीक्षा ।

EXAMINATION OF THE SOIL WHERE WELLS CAN BE DUG

पातालादूर्ध्वगमाः शिराः प्रसर्पन्ति सर्वतो दिक्षु ।
नीरस्य भूमिमध्ये ज्ञात्वा ताः कल्पयेत् कूपम् ॥९४॥

The ascending veins of water issuing out of the nether regions spread in all directions; hence before digging a well one should acquire the knowledge of these veins inside the earth. **(94)**

यदि वेतसोम्बुरहिते देशे हस्तैस्त्रिभिस्ततः पश्चात् ।
सार्धे पुरुषे तोयं वहति शिरा पश्चिमा तत्र ॥९५॥

If there be Vetasa trees in a waterless region, 3 cubits and 18 digits below the earth there will be found a vein of water flowing to the west. **(95)**

चिह्नमपि चार्धपुरुषे मण्डूकः पाण्डुरो हि मृत्पीता ।
पुटभेदकश्च तस्मिन् पाषाणे भवति बहूतोयः ॥९६॥

If a yellow frog and yellow soil be found, 2 cubits and 6 digits below the surface of the ground in the field, the bend of a river full of water is sure to be found even beneath hard rock (there). **(96)**

जम्बूवृक्षस्य प्राग्वल्मीको यदि भवेत्समीपस्थः ।
तस्माद्दक्षिणपार्श्वे सलिलं पुरुषद्वये साधु ॥९७॥

If there be anthills to the east of, and near, a Blackberry tree, water is sure to be found 2 cubits and 6 digits beneath the surface of the ground there. **(97)**

अर्धपुरुषे च मत्स्यः पारावतसंनिभश्च पाषाणः।
मृद्भवति तत्र नीला दीर्घं कालं च बहूतोयम् ॥९८॥

If fishbones, stones having the colour of pigeons, or blue soil are to be found, 2 cubits and 6 digits beneath the surface of the ground somewhere, beneath these things there water is sure to continue long. **(98)**

वल्मीकोपमितायां निर्गुण्ड्यां दक्षिणे करत्रयोन्माने।
पुरुषद्वयेन पादे भवति जलं स्वादु चाशोष्यम् ॥९९॥

To the south of a Nirguṇḍa tree grown on soil covered with anthills, at a distance of 3 cubits, and 10 cubits and 3 digits beneath the ground, tasteful and perennial water is sure to be present. **(99)**

रोहितमत्स्योर्धनरे मृत्कपिला पाण्डुरा ततः परतः।
सिकताश्च शर्कराश्च क्रमेण परतो भवत्यम्भः ॥१००॥

If 2 cubits and 12 digits beneath the ground Rohita fish, yellow soil or thin sands and gravels are to be found successively, water is sure to be there beneath these. **(100)**

पूर्वेण यदि बदर्या वल्मीको दृश्यते जलं पश्चात्।
पुरुषैस्त्रिभिरादेश्यं श्वेता गृहगोधिकार्धनरे ॥१०१॥

If an anthill be found in east of a place where a Badari tree is and if a white lizzard is there, 2 cubits and 2 digits below the ground, then water will certainly be found in the west (of that locality) 13 1/2 cubits below the surface. **(101)**

सफला वा बदरी चेद्दिश्यपरस्यां जलं ततो भवति।
पुरुषत्रये सपादे भवति परं दुन्दुभेश्चिह्नम् ॥१०२॥

One is sure to find water 14 cubits and 15 digits below the ground in the west of a fruiting Badari tree towards the west of which if there are to be found signs of the existence of a cobra. **(102)**

काकोदुम्बरिकायां वल्मीको दृश्यते शिरा तस्मिन् ।
पुरुषत्रये सपादे पश्चिमदिक्स्था च सा वहति ॥१०३॥

One is sure to find a vein of water moving to the west 14 cubits and 15 digits below the ground where one finds anthill beneath a Kākodumbara tree. **(103)**

आपाण्डुरा च मृत्स्ना गौरसवर्णाश्च भवति पाषाणाः ॥
पुरुषार्धे कुमुदनिभो दृष्टिपथं मूषको याति ॥१०४॥
आसन्नो वल्मीको दक्षिणपार्श्वे बिभीतकस्य ।
अध्यर्धे भवति शिरा पुरुषे ज्ञेया दिशि प्राच्याम् ॥१०५॥

One is sure to meet with water 6 cubits below the ground in the west of a place where the ground is a little yellowish and the stone is of the colour of milk and also where 2 cubits and 6 digits below the ground one finds a white mouse, and nearby an anthill in the south a Vibhītaka tree. **(104-105)**

तस्यैव पश्चिमायां वल्मीको यदि भवेद्धस्ते ।
तत्रोदग्भवति शिरा चतुर्भिरर्धाधिकैः पुरुषैः ॥१०६॥

If an anthill is there in the west of this particular place one cubit away, then 20 cubits and 6 digits below the ground a vein of water moving to the north is sure to be found. **(106)**

श्वेतो विश्वंभरकः प्रथमे पुरुषे तु कुङ्कुमाभोश्मा
अपरस्यां दिशि च शिरा नश्यति वर्षत्रयेऽतीते ॥१०७॥

Where the white insect, named Viśvaṁbharaka, is to be found, 4 cubits below the ground as well as stone of mixed yellow and red colour, there a vein of water is to be found in the west of the place when the soil is dug out. But the vein will cease to exist three years after it has been found out. **(107)**

सकुशः सित एतस्यां वल्मीको यत्र कोविदारस्य ।
मध्ये तयोर्नरैरर्ध पञ्चमैस्तोयमक्षोभ्यम् ॥१०८॥

Where an anthill is to be found between white Kuśa and Kovidāra trees, there 25 cubits towards the west one can find profusion of water 24 cubits and 18 digits below the surface. (108)

प्रथमपुरुषे भुजङ्गः कमलोदरसंनिभा मही रक्ता।
कुरुविन्दकपाषाणाश्चिह्नान्येतानि वाच्यानि ॥१०९॥

Water is sure to be found below the ground of a soil where 4 cubits below the surface a serpent, soil having the colour of a lotus, and a kind of stone named Kuruvindaka, are to be found. (109)

सर्वेषां वृक्षाणामधःस्थितं दर्दुरं यदा पश्येत्।
तस्माद्धस्तं तोयं चतुर्भिरर्धाधिकैः पुरुषैः ॥११०॥

Water is surely present 20 cubits and 6 digits beneath the ground where ever a tree has a frog one cubit below the soil on which it is situated. (110)

उत्तरतश्च मधूकादहिनिलयः पश्चिमोत्तरे तोयम्।
परिहृत्य पञ्चहस्तानर्धाष्टमपौरुषं वाच्यम् ॥१११॥

If there be the abode of a serpent towards the north of a Madhuka tree, then 5 cubits away towards the north and west of the place (on which the tree is situated) 38 cubits and 6 digits below the ground, water is sure to be found. (111)

अहिराजः पुरुषेस्मिन्धूम्रा धात्री कुलत्थवर्णोश्मा
माहेन्द्री वहति शिरा भवति सफेनं सदा तोयम् ॥११२॥

The ground 4 cubits below which a king serpent, earth of ashy colour and stone of the colour of Kulattha are to be found, there a vein of water flowing to the east is to be found below the ground, the water of which is always full of foam. (112)

सर्पावासः पश्चाद्यदा कदम्बस्य दक्षिणेन जलम्।
पुरतो हस्तत्रितयात्षड्भिः पुरुषैस्तुरीयोनैः ॥११३॥

Where there is the abode of a serpent towards south-west of a Kadaṁba tree, there towards the east, 3 cubits away, 27 cubits below the ground profusion of water is to be found. (113)

वल्मीकसंवृतो यदि तालो वा भवति नालिकेरो वा।
पश्चात्षड्भिर्हस्तैर्नरैश्चतुर्भिः शिरा यस्य ॥११४॥

Where there is to the west, 6 cubits away from the place (on which the tree is located) a palmyra, or a coconut tree surrounded by anthills, 18 cubits beneath the ground a vein of water flowing to the west is sure to be found. (114)

अश्मातकस्य वामे बदरी वा दृश्यतेहिनिलयो वा।
षड्भिरुग्वास्य करैः सार्धे पुरुषत्रये तोयम् ॥११५॥

Where to the left of a Aśmāntaka tree, either a Badari tree or the abode of a serpent is to be found, there 6 cubits away towards the west 15 cubits and 18 digits below the ground water is to be found. (115)

कूर्मः प्रथमे पुरुषे पाषाणो धूसरः ससिकता मृद्।
आदौ शिरा च याम्यां पूर्वोत्तरतो द्वितीया च ॥११६॥

Where 4 cubits below the soil a tortoise, stone of ashy colour, and soil mixed with sand are to be found, there beneath the ground a vein of water flowing to the south is to be found too, and a little to the north east thereof another vein of water is to be found. (116)

जलरहिते यदि देशे चिह्नान्यनूपजानि दृश्यन्ते।
वीरणर्दूवा हरिता यत्र हि तस्मिञ्जलं पुरुषे ॥११७॥

Where in a waterless (dreary) tract signs of watery region are found, and where Vīraṇa and Durvā are seen, there 4 1/2 cubits below the ground water is to be found too. (117)

तिलकाम्रातकवरुणकभल्लातकबिल्व तिन्दुकाङ्कोलाः।
पिण्डीरशिरीषाञ्जनपरुषक वञ्जुलातिबलाः ॥११८॥

एते यदि सुस्निग्धैर्वल्मीकैः परिवृतास्ततस्तोयम् ।
हस्तैस्त्रिभिरुत्तरतश्चतुर्भिरर्धेन च नरस्य ॥११९॥

If wet anthill is to be found beneath any of these trees: Tilaka, Āmrātaka, Varuṇaka, Bhallātaka, Bilva, Tinduka Aṅkola, Piṇḍira, Śirīsha, Añjana, Parushaka, Vañjula, Atibala - then to the north thereof 3 cubits away 20 cubits and 6 digits below the ground there is water. **(118-119)**

अतृणे सतृणा यस्मिन् सतृणे तृणवर्जिता: मही यत्र ।
तस्मिन् शिरा प्रदिष्टा वक्तव्यं वा धनं तत्र ॥१२०॥

Where in the midst of grassless ground a grassful spot is to be found, and vice versa, there is water below the surface. **(120)**

कण्टकाकण्टकानां व्यत्यासेम्भस्त्रिभिः करैः पश्चात् ।
खात्वा पुरुषत्रितयं त्रिभागयुक्तं धनं वा स्यात् ॥१२१॥

If a thorny tree is to be found in the midst of a number of trees without thorns, then if one digs the ground there 3 cubits away to the west, one is sure to find water or riches 15 cubits below the soil. **(121)**

वृक्षस्यैका शाखा यदि विनता भवति पाण्डुरा वा स्यात् ।
विज्ञातव्यं शाखाप्रतले नीरं त्रिपुरुषं तु ॥१२२॥

If the branches of a tree are bent down or of yellow colour, then 13 and half cubits below the soil, under the top part of the branches water is sure to be found. **(122)**

फलकुसुमविकारो यस्य तस्य पूर्वे शिरा त्रिभिर्हस्तैः ।
भवति पुरुषैश्चतुर्भिः पाषाणाधः क्षितिः पीता ॥१२३॥

If earth and stone of yellow colour are to be found 18 cubits beneath the soil, lying 3 cubits away to the east of a tree which has developed signs of disease in its fruits and flowers - there water is to be found beneath its surface. **(123)**

यदि कण्टकहीना स्यान्निदिग्धिका शुभ्रपुष्पसंयुक्ता।
तस्यास्तलेम्बु वाच्यं त्रिभिर्नरैरर्धपुरुषे वा ॥१२४॥

If a Kaṇṭakāri plant with flowers of white colour is found thornless, then 2 cubits 6 digits beneath the soil, or 13 cubits beneath thereof, water is to be found. **(124)**

खर्जुरी द्विशिरस्का यत्र भवेज्जलविवर्जिते देशे।
तस्याः पश्चिमभागे निर्देश्यं त्रिपुरुषैर्वारि ॥१२५॥

If in a waterless ground a date tree with 2 heads is to be found, then to the west of ground, 13 cubits beneath the surface water is to be found. **(125)**

यदि भवति कर्णिकारः सितकुसुमः स्यात्पलाशवृक्षो वा।
सव्येन तत्र हस्तद्वयेम्बु पुरुषत्रये भवति ॥१२६॥

If a Karṇikāra tree with white flowers, or a Palāśa tree is to be found, then to the north of the ground on which these are located, 15 cubits beneath the soil there is water. **(126)**

ऊष्मा यस्यां धात्र्यां धूमो वा तत्र वारि नरयुगले।
निर्देष्टव्या च शिरा महता वारिप्रवाहेण ॥१२७॥

The ground which is always warm, or out of which smoke seems to come out, 9 cubits beneath thereof a vein of water full of strong current is to be found. **(127)**

यस्मिन् क्षेत्रोद्देशे जातं शस्यं विनाशमुपयाति।
स्निग्धमतिपाण्डुरं वा महाशिरा नरयुगे तत्र ॥१२८॥

The ground where the corn becomes of yellow colour while unripe and dies away, there 9 cubits beneath the soil a strong vein of water is to be found. **(128)**

मरुदेशे भवति शिरा यथा तथातः पर प्रवक्ष्यामि।
ग्रीवा करभाणामिव भूतलसंस्था शिरा याति ॥१२९॥

पूर्वोत्तरेण पीलोर्यदि वल्मीको जलं भवति पश्चात् ।
उत्तरगमना च शिरा विज्ञेया पञ्चभिः पुरुषैः ॥१३०॥

Then we are describing the signs of vein of water in the desert: If an anthill of yellowish colour is to be found in the north-east of a desert then in the west, which is like a hot spring, water is to be found. (129-130)

चिह्नं दर्दुर आदौ सत्कपिला तत्परं भवेद्धरिता ।
भवति च पुरुषं वाश्मा तस्य तले परि निर्देश्यम् ॥१३१॥

The soil where first a frog and then earth of yellow colour, and then 1 1/2 cubits below heat is felt, there beneath the ground water is sure to be found. (131)

बदरीरोहितवृक्षौ संपृक्तौ चेद्विनापि वल्मीकात् ।
हस्तत्रयेम्बू पश्चात् षोडशाभिर्मानवैर्भवति ॥१३२॥

The ground where a Badari tree is found adjacent to a Rohita tree, there even in absence of an anthill 3 cubits away in the west and 94 1/2 cubits below the ground water is to be found. (132)

सुरसं जलमादौ दक्षिणे शिरा वहति चोत्तरेणान्या ।
पिष्टनिभः पाषाणो मृच्छ्वेता वृश्चिकोर्धनरे ॥१३३॥

The ground where first a serpent is to be found 2 cubits and 6 digits below, then soil of white colour and then stone of the same colour, there in the north thereof a vein of water flowing to the south is to be found. (133)

सकरीरा चेद्बदरी त्रिभिः करैः पश्चिमेन तत्राम्भः ॥
अष्टादशभिः पुरुषैरैशानी बहुजला च शिरा ॥१३४॥

If a Karira plant is to be found beneath a Badari tree, then 3 cubits away to the west, 81 cubits below the ground a vein of water flowing to north-east is to be found, a vein which has a profusion of water. (134)

ककुभकरीरावेकत्र संयुतौ ककुभबिल्वौ वा।
हस्तत्रयेम्बू पश्चान्नरैर्भवत्येकविंशत्या ॥१३५॥

The desert where Kakubha and Karira, or Kakubhá and Bilva, trees are seen very near one another there in the west 3 cubits away, 94 1/2 cubits below water is to be found. (135)

वल्मीकमूर्धनि यदा दूर्वा दर्भाश्च पाण्डुराः सन्ति।
कूपो मध्ये देयो जलमत्र नरैकविंशत्या ॥१३६॥

If over an anthill grasses of yellow colour and Durvā are to be found, and one digs a well between the two then 189 cubits below the ground water is to be found. (136)

ग्रन्थिप्रचुरा यस्मिन्शमी भवेदुत्तरेण वल्मीकः।
पश्चात्पञ्चकरान्ते शतार्धसंख्यैर्नरैः सलिलम् ॥१३७॥

Where an anthill is to be found to the north of a Śami tree with knots (tubercles) all over its body, there 5 cubits away to the west, 225 cubits below the ground water is sure to be found. (137)

जम्बू त्रिवृता श्यामा शिशुमारी शारिवा शिवा दूर्वा।
वीरुधयो वाराही ज्योतिष्मती गरुडवेगा च ॥१३८॥

Jambu Trivṛtā, Śyāmā, Śiśumāri, Sārivā, Śivā, Dūrvā: all these gulmas; or such trees as Vārāhi, Jyotishmati, Garuḍavegā, Sūkarikā, Māśalatā, Vyāghrapadā,- if any of these is to be found on stony ground, then 3 cubits north of the anthill adjacent thereto, 13 1/2 cubits below the ground water is to be found. (138-139)

सूकरिका माषलता व्याघ्रपदा चेति यद्यहेर्निलये ।
वल्मीकादुत्तरतः करैस्त्रिपुरुषागतं तोयम् ॥१३९॥
एतदनूपे वाच्यं जाङ्गलभूमौ च पञ्चभिः पुरुषैः ॥
एतैरेव निमित्तैर्मरुभूमावष्टभिः कथयेत् ॥१४०॥

The above rule (as laid down in 138-139) applies to mountainous regions of Anūpa country, but in accordance with the spirit of this formula even in the mountainous grounds of Jāṅgala region water is to be found 30 1/2 cubits below the surface, and in the case of a desert 36 cubits below. **(140)**

एकनिभा यत्र मही तृणतरुवल्मीकगुल्मपरिहीना ।
तस्यां यत्र विकारो भवति धरित्र्यां जलं तत्र ॥१४१॥

Where the ground is uniformly even and is devoid of grasses, trees, anthills and shrubs, if a change is noticed there in any of these, water is sure to be found below the surface. **(141)**

हस्ता मघानुराधापुष्यधनिष्ठोत्तराश्च रोहिण्यः ।
शतभिषगित्यारम्भे कूपानां शस्यते भगणः ॥१४२॥

It is good to begin digging a well when the moon is in any of the constellation in the Zodiac: Hastā, Maghā, Anurādhā, Pushyā, Dhanishṭhā, Uttaraphalguṇi, Uttarāshāḍhā, Uttara- bhādrapada, Rohiṇi and Śatabhishā. **(142)**

आग्नेये यदि कोणे ग्रामस्य पुरस्य वा भवति कूपः ।
नित्यं स करोति भयं दाहं च समानुषं प्रायः ॥१४३॥

The presence of a well in the south-east of a house or a village is productive of perpetual fear, and causes the conflagration of houses, as if by a human agent. **(143)**

नैऋतकोणे बालक्षयं च वनिताक्षयं च वायव्ये ।
दिश्यैशान्यां भीतिः शेषास्तु शुभावहाः कूपाः ॥१४४॥

A well in the south-west of a house or a village means loss of property to the inhabitants: one in north-west causes loss of

wives, and one in the north-east causes fear. The digging of a well anywhere else is propitious. (144)

या मेदिनी काशकुशैश्च युक्ता
नीला च मृद्यत्र सशर्करा च।
तस्यां प्रणीतं सुरसं च तोयं
कृष्णाथवा यत्र च तिक्तमृत्स्ना ॥१४५॥

The water below the surface of the ground which is full of Kāśa and Kuśa grass, or where the earth is of blue colour, or full of fine gravels, or the earth is black and pungent to the taste, is sure to be both tasteful and sweet. (145)

सशर्कराभा तु मही कषायं
क्षारं धरित्री कपिला करोति।
अपांडुरायां लवणं प्रदिष्टं
मिष्टं पयो नीलवसुन्धरायाम् ॥१४६॥

There where the earth is yellowish and full of gravels and pungent to the taste, the water below the surface is caustic; where the earth is of any colour other than pale the water below the surface is salty, and the water is sweet where the earth is of blue colour. (146)

अथ पोषणविधिः ।

RULES FOR THE NOURISHMENT OF PLANTS

फलकुसुमसंपद्रुचिना रोपणतो भवति केवलान्न यतः।
पोषणविधिमथ संमतमनोकहानामतो वक्ष्ये ॥१४७॥

Trees do not produce fruits and flowers merely because they are planted; hence we are going to state the rules relating to the nourishment of plants as framed by the Sages. (147)

खर्जूरबिल्वलकुचा: सितसर्षपेण
पिण्याकतश्च तुषवारिवशेन चाम्रा: ।
ऐरावता निचुलपत्रजलोक्षणेन
सव्रीहिमांससलिलेन च यान्ति वृद्धिम् ॥१४८॥

If one applies powdered oil-cakes of white mustard or sesamum at the root of Kharjūra, Bilva and Lakucha trees, - all these three grow; and the mango tree grows if it is watered with water in which husks are soaked; Āirāvata and Nichulapatra grow by simple watering, but they grow also if watered with flesh and paddy washings. **(148)**

प्राचीनामलकतरो: प्रिया हि माषा:
क्षीराम्भो हितमिह बालतिन्दुकानाम् ।
प्रीयन्ते यवरजसा च नालिकेरा:
सर्वेषां भवति रूचिर्हि निम्नभूमौ ॥१४९॥

For the (growth of) old Āmalaka trees the pulse māsha is extremely beneficial; for young Tinduka trees application of water and milk is very helpful; powders of barley help the growth of coconut trees; and all trees rapidly grow if in the planes. **(149)**

कुरङ्गकिटिसारङ्गशृगालश्वादिमेदसा ।
क्वथितेन सदुग्धेन पञ्चपल्लववारिणा ।
कृतसेको भवेदाशु सहकारोऽतिसौरभ: ॥१५०॥

Mango trees bear very fragrant and sweet fruits at an early date if they are watered with decoction of milk, pañchapallava, i.e., leaves of mango, Aśvattha, Vaṭa, Plaksa and Yajñadruma, together with the fat of deer, boar, jackal, elephant, horse etc. **(150)**

घृतकुणपवचावराहविष्टा-
गलिलमतीव सुखाय दाडिमानाम् ।
क्वथितमथ कुलत्थचूर्णकं वा

जलमपि वृद्धिकरं सदा शफर्याः ॥१५१॥

A decoction of clarified butter, kuṇapa water, vacha, and pig's stool - is extremely favourable to the development of fruits of Dāḍima trees. And water or decoction made up of powders of kulattha is favourable to the roots of the same tree. (151)

यत्त्रिफलाशफरीघृतलिप्तो
धूपित आद्यफलत्रयधूपैः।
आम्रफलैरिह दाडिमशाखी
तालफलानि विडम्बयतीव ॥१५२॥

If one, after besmearing the trunk of a pomegranate tree with Saphari fish and powders of triphalaa (fruits of Āmalaka, Harītaki and Bayedā), apples to its roots the powders of above three fruits and mango paste and also fumigates with frankincense, the fruit of the said tree is sure to be as large as the palmyra fruit. (152)

दधिमस्तुकाञ्जिकसुराबदरी-
तिलमेथिकाकुणपसीधुपयः।
फलिनीकदम्बकरिकेसरका-
न्कुरुते सुगन्धिबहुपुष्पयुतान् ॥१५३॥

If one waters a fruiting Kadaṁba or Nāgakeśara tree with the compound liquid made of curd, fermented rice water, wine made out of rice, plum, sesamem, methi, kuṇapa water and wine prepared from sugar and milk, they are sure to bear innumerable fragrant flowers. (153)

प्रियङ्गुगुञ्जाफलनिम्बपिप्पली-
र्वचाहरिद्रातिलसर्षपैः समैः।
घृताश्वकर्णाम्बु विलोड्य पायये-
त्सचम्पकं नागतरौ सुवृद्धिदम् ॥१५४॥

If one fills the trenches around a Nāgakeśara or Champaka tree with the decoction made up of priyanhu, guñjā fruit, nimba,

pippali, vacha, haridrā, tila and sarshapa - all taken in equal parts together with clarified butter and broth of Aśvakarṇa (bark) they are sure to grow luxuriantly. (154)

सिक्ताम्भोभिः पललतुषयोः कुक्कुटानां पुरीषं
मूले दत्वा सकुसुमफला गोस्तनी वृद्धिमेति ।
स्कन्धन्यस्तैः पनसतरवोप्याशु पालालभारै-
र्मूलादग्रं दधति च वचावारिसिक्ताः फलानि ॥१५५॥

If one waters the roots of vine with the compound liquid made up of stools of fowls (flesh and fish), straw and husks of paddy, it bears fruit and flowers and grows; and if one compound 6 maunds and 10 seers of Gārudi creepers with leaves and besmears the trunk of a jackfruit tree from top to foot with it and waters the roots of the said tree with the broth of vacha,- it bears fruits all over its body from head to foot. (155)

सर्पिर्गुडक्षीरमधूपचारं
दत्वा निषिक्तौ च कपित्थबिल्वौ ॥
पीयूषकल्पान्यतिमांसलानि
फलान्यनस्थीनि सदा दधाते ॥१५६॥

If a Kapittha or Bilva tree be watered with clarified butter, milk and honey, it bears fruits which are sweet to the taste, full of fleshy substance containing scanty number of seeds. (156)

कोशातकी दलशिफाक्वथितामिषाम्भः-
संषेचनाच्च सुकणारजसा च युक्तः ।
लब्धोपचारमथ धूपजलाभिषिक्तः
शोभां बिभर्त्ति नितरां कुसुमैर्मधूकः ॥१५७॥

A Madhūka tree puts on a beautiful and dignified appearance like a worshipworthy being when it is watered with the compound made up of the broth of roots and leaves of Kośātaki, Pippala, kuṇapa water, and powdered resin. (157)

तिलयष्टिमधुक मधुभिर्मिश्रितजलसेकतर्पितावदरी।
कुणपैरुपचितमूला फलति फलं शर्करामधुरम् ॥१५८॥

A plum tree bears fruits which are as sweet as sugar when its roots are developed through being watered with the decoction of Tila and Yashṭimadhu and with kuṇapa water. **(158)**

अजैडकामूकरविड् विडङ्ग-
किण्वोपचारेण च बीजपूरः।
भूयोऽश्वमूत्राविल वारिसिक्तः
फलानि धत्ते सुबहूनि शश्वत् ॥१५९॥

A Bījapūra tree bears fruits again and again when the compound substance consisting of the stools of goat, sheep, pig, etc. Vidaṅga and the stools of men, is applied to the roots and then these roots are watered with the urine of horses and sheep. **(159)**

वृश्चिककण्टकविद्धाः सुरभीघृतधूपिता हि निखिललताः।
मूषककोलवसाभिः संसिक्ताः स्युः फलैर्नम्राः ॥१६०॥

All creepers are bent down under the weight of their fruits when their roots are pierced with the stings of scorpion and fumigated with clarified butter and watered with the fats of mice and pig. **(160)**

सुरभिजलनिषेकतो निदाघे
कूणपजलेन च केतकी निषिक्ता।
जलधर समये सुगन्धसूची-
चरनिचितानि बिभर्त्ति पल्लवानि ॥१६१॥

A Ketaki tree if watered with the urine of cows and kuṇapa water in summer, bears fragrant flowers and sharp thorny leaves in the rainy season. **(161)**

यस्य कस्यापि पुष्पस्य सौरभेणाधिवासितान्।
मृत्तिकाशकलान्मूले वृक्षाणां बहुलान् क्षिपेत् ॥१६२॥

One should apply to the roots of all trees, in profusion, soil scented by fragrant flowers. **(162)**

कुष्ठपत्रमुरामुस्ततगराशीरचूर्णकैः ।
मिश्रितेनाम्भसा सेकान्मासं सौरभसंभवः ॥१६३॥

Any flowering tree bears fragrant flowers in the course of a month when watered with the liquid compound of the powders of Kusṭha, Patra, Murā, Musta, Tagara And Uśīra. **(163)**

कुल्माषदन्तिदन्तानां चूर्णयुक्त्यङ्कसंभवा ।
प्रत्यहं पुष्पिताम्भोजमण्डिता पद्मिनी भवेत् ॥१६४॥

If one applies to the roots of a lotus plant which is barren, the compounded dust of kulattha and the tusks of elephants, it is sure to be graced with sweet lotuses every day. **(164)**

सिद्धार्थः कदलीदलानि शफरी विड्कोलमार्जारयो-
रेतेषां समभागमाज्यमहितं चूर्णं तरुभ्यो हितम् ।
दत्तं धूपविलेपनोपचरणैरोप्यायनं रोगहृ-
च्छाखाः पल्लवयत्यलं मधुकरव्यालोलपुष्पच्छदाः ॥१६५॥

One applies to the roots white mustard, plantain leaf Safari fish stools of a pig and cat in equal parts mixed with clarified butter, besmears the trunks and fumigate them therewith, they (trees) become free from all diseases, grow luxuriantly and the branches become graced with flowers and a number of bees. **(165)**

धूपो घृतस्य समृदो यववारिसेको
नित्यं च दुग्धसलिलैः कुणपाम्बुभिर्वा ।
लेपो विड्ङगतिलकल्ककृतं शिशूनां
वृद्धिं करोति परमां खलु भूरुहाणाम् ॥१६६॥

A Sisoo tree grows very luxuriantly if one, after fumigating it with barley, wine, fermented rice water and clarified butter, besmears its trunk with cakes made up of Vidaṅga and sesamum bathed either in milk or kuṇapa water **(166)**

अङ्कोलकाथतोयेन मिश्रितं घृतमाक्षिकम् ।
वसा किटिकुरङ्गानामेतैः सिक्ता महीरुहाः ॥१६७॥
सिद्धार्थकफलोपेताः सर्वदा फलशोभिताः ।
जायन्ते पुष्पपत्राढ्याः सच्छाया रोगवार्जिताः ॥१६८॥

All trees without exception always become graced with an abundance of fruits and leaves and flowers, become immune to diseases and afford pleasant shades if one applies to them the decoction of Aňkola flower mixed with clarified butter and honey, fats of deer and boar added thereto, powders of white mustard, and well watered. **(167-168)**

यष्टिमधूकपुष्पाणि सिता कुष्टं समाक्षिकम् ।
निक्षिप्य गुलिकाः कृत्वा मूले सर्वत्र निक्षिपेत् ॥१६९

One should make a paste of Yashṭimadhu, Madhūka flowers, white Kuṣṭha and honey, make them into pills and scatter them around the roots of all trees. **(169)**

दुग्धसेकं च वृक्षस्य यस्य कुर्याद्विचक्षणः ।
फलं सुनिश्चितं तस्य मधुरं जायते भृशम् ॥१७०॥

Any fruiting tree verily bears very sweet fruits if any experienced or wise man waters its roots with milk.
the fat of pig and porpoise, and then sown in earth and sprinkled over with spring water, it sprouts in no time. **(170)**

अथ कुणपजलम् ।

THE NOURISHING SOLUTION

कुरङ्गकिटिमत्स्यानां मेषच्छागलखड्गिनाम् ।
मांसं ग्राह्यं यथालाभं मेदोमज्जावसास्तथा ॥१७१॥
तान्सर्वानेकतः कृत्वा वह्नौ नीरेण पाचयेत् ।
संपक्वं हि क्षिपेद्भाण्डे तत्र दुग्धं च निक्षिपेत् ॥१७२॥
चूर्णीकृत्य खलिर्दैया तिलानां माक्षिकं तथा ।
स्विन्नांश्च सरसान्माषांस्तत्र दद्याद्घृतं तथा ॥१७३॥
उष्णं जलं क्षिपेत्तत्र मात्रा नास्तीह कस्यचित् ।
पक्षैकं स्थापिते भाण्डे कोष्णस्थाने मनीषिणा ।
कुणपस्तु भवेदेव तरूणां पुष्टिकारकः ॥१७४॥

One should boil the flesh, fat and marrow of deer, pig, fish, sheep, goat and rhinoceros in water, and when it is properly boiled one should put the mixture in an earthen pot and add into the compound milk, powders of sesamum oil-cakes, māsha (pulse) boiled in honey, the decoction of pulses, clarified butter and hot water. There is no fixity as to the amount of any of these elements; when the said pot is put in a warm place for about a fortnight the compound becomes what is called Kuṇapa Water which is very healthy (for plants in general). **(171-174)**

अथ तरुचिकित्सा ।

TREATMENT OF PLANTS

नराणामिव वृक्षाणां वातपित्तकफाद्गदाः ।
संभवन्ति निरूप्यातः कुर्यात्तद्दोषनाशनम् ॥१७५॥

Trees, like men, get diseases through the affections of vāta (wind), pitta (bile) and kapha (phlegm)- the three pathological

humours. One should diagnose the diseases through their symptoms and cure them radically. (175)

कीटजग्धेग्निसंप्लुष्टे वातभग्नेशनिक्षते ।
वृक्षे छेदोपचारादिपीडिते च पृथक्क्रिया ॥१७६॥

When a tree is consumed by insects, burnt by fire, broken by storm, struck by thunderbolt- one should cut away the affected parts; but in case of diseases the operation is to be of a different nature. (176)

कृशदीर्घो लघुरूक्षो निद्राहीनोल्पचेतनः ।
न धत्ते फलपुष्पाणि वातप्रकृतिकस्तरुः ॥१७७॥

Tall, thin, short, sleeping or partly conscious trees are of windy humour. They do not bear flowers and fruits. (177)

आतपासहनः पाण्डुः शाखाहीनो मुहुर्यदि ।
अकालफलपाकी स्याच्छाखी पित्तात्मकः स्मृतः ॥१७८॥

Trees of bilious temper cannot bear the rays of the sun, are of yellow colour, and shed their branches over and over again, and bear premature fruits. (178)

स्निग्धशाखादलः शाखी सम्यक्पुष्पफलोज्ज्वलः ।
लतापरीतगात्रस्तु कफवान्परिमण्डलः ॥१८९॥

Trees of phlegmatic temper have their branches and leaves very glossy, flowers and fruits well shaped and of good appearance, trunks symmetrical, and all parts covered with creepers. (179)

कटुतिक्तकषायरसैः पवनः पित्तं कटूष्णलवणाम्लैः ।
स्निग्धमधुराम्ललवणैः श्लेष्मा कोपं प्रयाति तरोः ॥१८०॥

Substances of pungent, bitter or caustic tastes are destructive of the windy humour of trees; and those having bitter, hot, salty and acid juice are destructive of the bile, and those with graceful, sweet, acid or salty juice are destructive of the phlegm. (180)

सुस्निग्धैः पिशितरसैः प्रयाति वातः
सुस्निग्धैर्मधुरहिमैर्जलैश्च पित्तम् ।
कट्वम्लैरहिमजलैः कषायरूक्षैः ।
श्लेष्मापि क्रमविहितैः प्रयाति नाशम् ॥१८१॥

The affections of windy humour are alleviated through the application of graceful things like clarified butter mixed with flesh juice; the affection through the bile is alleviated through the application of things that are cold and graceful mixed with water, and the affectation through phlegm is modified through the application of acid things mixed with hot water, or through pungent and bitter things. **(181)**

रौक्षं ग्रन्थिः कुटिलता वाताद्वृक्षस्य जायते ।
गोविड् लोध्रवसाकुणपजलैस्तज्जयो भवेत् ॥१८२॥

Rudeness of appearance, tubercles (nodules over the body) both of large and small size are due to windy humour which may be overcome up the application of Lodhra flower, cowdung, fats and kunapa water. **(182)**

दोषैर्यस्य विना प्रवालकुसुमम्लानिर्विरूढं वपुः
मूले तस्य तरोर्भवन्ति क्रिमयो यत्नाच्च तानुद्धरेत् ।
गोमूत्राज्यबिडङ्गसर्षपतिलैर्लिप्तः प्रणष्टैस्ततः
सिक्तः क्षीरजलैरुदेति सहसा धूपैश्च धूपायितः ॥१८३॥

One should do well to realise that worms are at roots of plants affected with tubercles, or of plants for the paleness of buds and flowers of which no other particular cause can be assigned; and one should do well to root out these worms with care. If now fresh urine of cows, clarified butter, Vidanga, mustard and sesamum are mixed together and applied to the trunk, then fumigated and watered with milk and water, they (these plants) grow. **(183)**

कराञ्जारग्वधारिष्टसप्तपर्णात्वचाकृतः ।

उपचारः क्रिमिहरो मूत्रमुस्तविडङ्गवान् ॥१८४॥

All kinds of worms are destroyed if one applies to the roots of trees the barks of Karañja, Āragvada, Arishṭa, Saptaparṇa- pasted in the urine of cows together with Vidaṅga and Musta. (184)

कुणपजलपयोनिषिक्तमूलः
सरसिजकन्दविलिप्तसर्वगात्रः ।
तरुरनलहतो बिभर्ति भूयो
मरकतरङ्गहरिन्ति पल्लवानि ॥१८५॥

The bodies of trees burnt with fire when besmeared with lotus bulb pasted with kuṇapa water and milk, bear leaves as bright as marakata jewels. (185)

प्लक्षार्कोदुम्बरत्वग्घृतमधुमधुरोच्छिष्टदुग्धैर्विलिप्तः
स्तम्भैरुत्तम्भ्य रज्ज्वा परिकलितवपुः पूरितः प्लक्षमृद्भिः ।
सिक्तः क्षीरेण भूयो जलभरिततलश्चण्डवातादिभग्नः
स्वस्थोभूत्वाङ्घ्रिपायी कुसुमफलभराण्यातनोति प्रकामम् ॥१८६॥

One should besmear the branch of a tree broken by wind with the barks of Plakṣa, Arka and Uduṁbara trees pasted in ghee, honey and beeswax mixed with milk; should set it (the broken parts) as before, and tie it to a post fixed nearby, and apply finely powdered earth to the fractured part. And if it be sprinkled with milk over and over again, and (the plant) watered at the root, the tree gets round and produces abundance of flowers and fruits. (186)

वृक्षस्याशनिदग्धस्य जीवनं शृणु भेषजम् ।
घनोशीरमधूकैश्च मुद्गमाषान् यवांस्तिलान् ॥१८७॥
पिष्ट्वा क्षीराम्बुसंयुक्तैः सेचयेत्तमभीक्ष्णशः ।
स सेकाप्यायितः शीघ्रं प्रकृतिस्थो भविष्यति ॥१८८॥

The treatment of trees struck by lighting is being given here; Ghana (musta), Uśira, Madhūka, Mudga, Māsha, Yava and Tila

pastes with milk and water,- when applied to the roots of (such a tree, it is eased and becomes normal. **(187-188)**

जनयित्वा फलकुसुमं यः पुनरुपयाति वन्ध्यतां शाखी।
सक्षीरैः कुणपजलैर्भूयः सिक्तः फलत्येव ॥१८९॥

The trees which get at dotage through repeated production of fruit and flowers, when bathed (treated) in kuṇapa water and milk again and again do surely bear fruit. **(189)**

असेकतोत्यन्त निषेकतश्च
शाखाविशेषं फलिनो निरूप्य।
सप्ताहमात्रं सृतमेव सर्पि-
र्विडङ्गदुग्धाम्बु निषेचनीयम् ॥१९०॥

When the branches of a tree become dry owing to excess or want of application of water, one should boil Vidaṅga, clarified butter and milk together, and sprinkle the tree with the mixture for a week. **(190)**

उन्निद्रता मत्स्य सगन्धिता च
प्रवालहानिः सपिपीलिकत्वम् ॥
त्वग्भ्रंशनाद्वारिकृतादजीर्णा-
त्तरोर्भवेत्तत्र चिकित्सनीयम् ॥१९१॥

When a tree suffers from incapacity to digest water, it is always pale, devoid of leaves, full of ants and the smell of fish, and in places devoid of barks. The following treatment has to be adopted in this case. **(191)**

तन्मूलशूलं परशुप्रहारै-
र्विस्रावितं दोषरसं निहत्य।
क्षौद्राज्यजन्तुघ्नतिलैः प्रलिप्तं
मृत्पूरितं दुग्धजलैर्निषिञ्चेत् ॥१९२॥

शर्करातिलगोक्षीर वारिमेकात्तथा तरोः।
शोषः शाम्यति वृक्षस्य लेपाद्धपोपचारतः ॥१९३॥

One should strike at the root of the tree suffering from indigestion to draw the poisonous sap out of the trunk, apply to the affected place a paste of honey, Vidaṅga powder and sesamum and cover it with earth and sprinkle it with water and milk. The atrophy (sosha) of a tree is radically cured if it is besmeared with the said paste after it has been sprinkled with sugar and sesamum mixed with milk and water and then fumigated. **(192-93)**

प्रियङ्गुवरकर्कारीवेतसार्जुनवल्कलैः।
क्षीरसिद्धैर्विलिप्तानां स्रावः शाम्यति शाखिनाम् ॥१९४॥

Exudation of trees is stopped if one applies to it the barks of Priyaṅgū, Vara, Karkāri, Vetasa and Arjuna pasted with and boiled in milk. **(194)**

BOTANICAL MARVELS

अथ विचित्रकरणम् ।

वृक्षायुर्वेदफलं मनोहरं शास्त्रतः सिद्धम्।
नानाविधानचित्रं चित्रीकरणं प्रवक्ष्यामि ॥१९५॥

The subject matter of the Vṛkshāyurveda is not to be found any where outside the scriptures. Let us here deal with some botanical marvels. **(195)**

सुरभिसुमनोलब्धामोदां निधाय च मृत्तिकां
धवखदिरयोः क्वाथाम्भोभिः सुगन्धिभिरूक्षणात्।
मलयजरजोलेपाद्धूपाद्धृतस्य च भूरुहां
व्रजति कुसुमं निर्गन्धानामतीव सुगन्धताम् ॥१९६॥

If one applies to the root of a tree bearing scentless flowers, earth (soil) scented (through association) with fragrant flowers, and then sprinkle it with decoction of Dhava and Khadira barks

and besmears it with sandal dust and then fumigates it with clarified butter and frankincense, it bears very fragrant flowers. **(196)**

यवतिलनिशापलाशैरुपचितमूला तदम्बुसिक्ता च ।
ज्वलदनलोपममसकृत्कर्पासी तूलकं सूते ॥१९७॥

When one applies barley, sesamum, Niśā and powdered bark of Palāśa tree to the root of a cotton tree, and sprinkles it with the decoetion made up of those things it yields fibres, as red as burning fire. **(197)**

शाल्मलीत्वग्निशानीलीत्रिफ कुष्टमीधुभिः ।
सकृल्लेपोपचारेण शुकपक्षनिभं भवेत् ॥१९८॥

If barks of Śālmalī, turmeric, indigo, triphalā (three fruits), kusha and rock salt be powdered and mixed with wine, and be applied to the roots of a cotton tree, it yields fibres as yellow as the feather of a Śuka bird. **(198)**

मञ्जिष्ठातिलयवपीतसारसारै-
र्जीवन्तीदलसहितैर्मनःशिलाजैः ।
गोजाविप्रचुरपयःसृतैर्विलिप्ता
कर्पासी प्रसवति तूलकं खनीलम् ॥१९९॥

If mañjishṭha, tila, yava, pitasāra, leaves of Jīvanti, powdered Manaśila mineral) be pasted together with the milk either of cow or goat, applied to the roots of a cotton tree, it produces fibres as blue as the sky. **(199)**

संपक्केक्षुरसविदारिकन्दकविलिप्तमूलभागस्य ।
सिक्तस्येक्षुरसेन च तरोरकाले भवेत् कुसुमम् ॥२००॥

If the cut stem of a tree (cuttings) be besmeared with boiled sugarcane juice, and sugar-cane juice be applied to its roots, it bears flowers out of season. **(200)**

तिलखलिविडङ्गगोमयविलोडितेक्षुरससेचितस्य तरोः ।

फलकुसुममकालभवं मनोहरं फलति लोकस्य ॥२०१॥

If sesamum oil-cakes, Vidaṅga, and cowdung be applied to the root of a tree, and is sprinkled with sugar-cane juice, it produces flowers out of season which are very pleasing to all men. **(201)**

मधुयष्टिसिताकुष्ठ मधुपुष्पविनिर्मितैः।
मोदकैश्छादिते मूले निरस्थि स्यात्फलं तरोः॥१०१॥

If Yashṭimadhu, sugar, Kuṣṭha, flowers of Madhūka be pasted together and applied to the root of a tree it produces fruit without seeds within. **(202)**

मधुककुमुमगुञ्जाशर्करोदुम्बराज्यं
समधु निहितमन्तः काण्डमुत्कीर्य बद्धा।
उपरि च परिलिप्तं वत्सविड्भिस्तरूणां
जनयति फलमेतत्स्वादुसेकादनस्थि ॥२०३॥

One should cut a big disc of bark from the trunk of a tree so as to make a hole fit enough for taking in medicine, fill it up with the flowers of Madhūka, Guñjā, Śarkarā, ripe Udumbara and honey, and then replace the said disc and besmear the affected parts with the dung of calves, bind it and apply to it any sweet liquid; (if this is done) the tree is sure to bear stoneless fruits. **(203)**

तत्कालनिहितस्योच्चैश्छागस्य स्कन्धचर्मणा।
बद्धायां वृक्षशाखायां फलपाको न जायते ॥२०४॥

If the branches of a tree are well wrapped with the neck – skins of goats recently killed, its fruits never ripen. **(204)**

करि वरमृदितबलीमुखनलकैर्मूलेषु कीलितस्य तरोः।
संवत्सरं च यावत्फलितस्य फलानि जायन्ते ॥२०५॥

If the root of a tree is pierced (injected) with the gullet of the monkey that has been rubbed with the exudation of an elephant, its fruits do not ripen within a year of the process. **(205)**

बद्ध्वा चर्म्मतृणाभ्यां विडङ्गमधुदुग्धलेपितोल्लिख्य।
शाखा पयोम्बुसेकाच्चिरमपि पक्वं फलं धत्ते ॥२०६॥

If the branch of a tree is wrapped in straw and leather, and is pasted over with Vidaṅga, honey and milk, and if milk and water are sprinkled over it, it bears ripe fruits for a long time to come. (206)

मीनकोलवसामांसदुग्धसेकेन धूपतः।
सर्वबीजानि साश्चर्यमुत्तिष्ठन्ति फलन्ति च ॥२०७॥

All kinds of seeds marvelously sprout and fructify when sprinkled with the decoction of fish, pig's flesh, fat and milk compounded together, and then fumigated. (207)

अङ्कोलतैलसूकरशिशुमारवसासु भावितं 'बीजं'।
सद्यो रोहति निहितं भूमौ करकाम्भसा सिक्तम् ॥२०८॥

If a seed is repeatedly bathed in oil extracted out of the Aṅkola fruit mixed with the fat of pig and porpoise, and then sown in earth and sprinkled over with spring water, it sprouts in no time. (208)

बीजमाम्रादिवृक्षाणां पक्वं मीनफलाम्बूनि।
अङ्कोलतैलदुग्धाज्ये निहितं वृहतीभवेत् ॥२०९॥
भस्मन्यामेलितं शुष्कमुसमुद्भिद्यते सह।
फलेनाशेषलोकस्य कृतकौतुकमञ्जसा ॥२१०॥

The seeds of mango and other trees if bathed for a long time a decoction of fish, vidaṅga, Aṅkola oil, milk and clarified butter and then sown, the trees that sprout of them assume gigantic size. And if that seed is repeatedly rubbed with the ashes of cowdung dried and sown, a fruitful tree which sprouts from it, becomes delightful to all. (209-210)

एकविंशतिवारेण कुक्कुटस्यासृजोक्षितम्।
तत्क्षणाद्दाडिमीबीजं वर्द्धते फलति ध्रुवम् ॥२११॥

If pomegranate seeds are treated 21 times in the blood of hen, within a short time trees sprout out of them and fructify (when sown). (211)

मत्स्यकोलवसामांसचणकक्षारभावितम् ।
यस्य कस्यापि वा बीजं ध्रुवं पुष्पफलं भवेत् ॥२१२॥

The seeds, that are treated with the compound made up of fish, pig's fat flesh and ashes of gram when sown develop very soon into trees full of flowers and fruits. (212)

स्कन्धतः समन्ततः मूकरास्थिभिर्दृढम् ।
कीलितो न संशयं नाशमेत्यनोकहः ॥२१३॥

The tree whose trunk is strongly pierced in all directions with bones of pig, never dries or perishes. (213)

कुलत्थक्वाथ तोयेन तरुः पुष्पफलं त्यजेत् ।
किंशुकार्जुनतर्कारीलवणाम्बूक्षणेन च ॥२१४॥

A tree becomes devoid of fruits and flowers if sprinkled over with the decoction made up of kulattha, or that made up of Palāśa, Arjuna and Tarkāri together with salt. (214)

नानावर्णैर्घटितं कन्दं कुमुदस्य सूत्रसंघटितम् ।
घृतमधूविलिप्तमुप्तं सूते कुसुमं तथावर्णम् ॥२१५॥

If bulbs are wrapped with fibres of water-lily, and their roots besmeared with honey and clarified butter variously coloured, and then sown, the flowers that grow out of them correspond to the colour of the clarified butter and honey. (215)

माहिषकरीषमूत्रैर्मृदितविशुष्कं दिनानि यत्सप्त ।
कुमुदफलबीजमुप्तं जनयति करवीरविटपं तत् ॥२१६॥

If the seeds of water – lily are rubbed with the stools and urine of buffalo, dried for seven days and sown, out of them sprout Karavīra trees. (216)

कूष्माण्डवार्ताक पटोलकादि-
बीजं वसाभावितमुप्तसिक्तम् ।
विशोधितायां भुवि सर्वकालं
फलान्यनस्थीनि महान्ति धत्ते ॥२१७॥

If the seeds of gourd, brinjal, paṭola and such plants be treated with fat and then sown in purified (prepared) gound, and water be sprinkled over them, the fruits that grow out of them become big and seedless. **(217)**

वार्ताकबीजं घृतमाक्षिकार्क-
विशोषितं गोमयलिप्तरन्ध्रे ।
बालस्य कूष्माण्डफलस्य तप्तं
पक्वाद्गृहीतं फलितं महत्स्यात् ॥२१८॥

If one digs a deep pit and besmears the bottom of it with cowdung and sow in it the seeds of Brinjal rubbed with honey and ghee, dried in the sun and bathed in the juice of green gourd, the plants that grow out of them when bear abundant fruits. **(218)**

मन्दारद्रुमरन्ध्रे या कौष्मांडी निर्गतालता ।
मृद्ङगोमयघृते तस्मिन् सिक्ते फलति सा सदा ॥२१९॥

If earth (soil) and cowdung and ghee compounded together be applied to the root of a gourd creeper coming out of the hole of a Mandāra tree, it always bears fruits. **(219)**

सूकरासृग्वसासिक्तमङ्कोलतैलभावितम् ।
एरण्डबीजं कारञ्जीफलं सूतेति कौतुकम् ॥२२०॥

If Castor seeds be bathed in the fat and blood of pigs and treated in Aṅkola oil and sown, Kārañji fruits grow out of them, which is really a wonder. **(220)**

खरतुरगबिड् निवेशिततापितया या शलाकया मूले ।
तिर्यग्विद्धा कदली फलति फलं करिकराकारम् ॥२२१॥

If one thrusts a rod in the stool of ass and horse and then heat it on fire, and then pierce it slantingly into the trunk of a plantain tree, the fruits that tree will produce will be as big as the trunk of an elephant. **(221)**

कोलशोणितमेदोभ्यामङ्कोलक्वथितेन च ।
सिञ्चिता कदली सूते दाडिमीफलमुत्तमम् ॥२२२॥

If one sprinkles the infusion of the blood and fat of boar and Aṅkola oil over a plantain tree it bears pomegranate fruits. **(222)**

नरमांसवसारक्तदन्तिदन्तविचूर्णितैः ।
मिश्रितेनाम्भसा सिक्ता रम्भा चूतफला भवेत् ॥२२३॥

When a plantain tree is sprinkled over with the flesh, fat and blood of man, and the powders of elephant's tusks dissolved in water it produces mango fruits. **(223)**

अङ्कोलक्वथितं स्विन्नं नृमांसं छागदुग्धयुक् ।
पिण्याकसहितं मूले सहकारस्य निक्षिपेत् ॥२२४॥
द्राक्षावल्लीसमाकारः सहकारः सदाफलः ।
जायते निश्चितं धत्ते सर्वेषामद्भुतं यदि ॥२२५॥

If one applies to the root of a mango tree broth of human fish and Aṅkola oil mixed with goat's milk and sesmum paste, it always bears fruits abundantly like vines, which is certainly a thing of wonder. **(224)**

शशकूर्मासृग्मध्ये बहुभावितमाम्रजं बीजम् ।
रूढं सिक्तं दुग्धैः फलति फलं सर्वकालेषु ॥२२६॥

If mango seeds be repeatedly treated in the blood of hare and tortoise and if milk be sprinkled over the trees that grow out of them, they always bear fruits.

क्रिमिरिपुयक्षयष्टीमधुगुडदुग्धविलेपनेन निम्बतरुः ।
भवति जलदुग्ध सिक्तः स्वभावतिक्तोपि मधुरफलः ॥२२७॥ **(226)**

If one applies to the Nimba tree which is naturally of bitter juice, the paste made up of Vidaṅga, Yashṭimadhu, molasses and milk and sprinkle it with water and milk produces sweetness. (227)

बीजं नरपलाङ्कोलतैलस्विन्नं शुभं सदा ।
उद्गच्छति मृदा पूर्णमम्भःसिक्तं करे क्षणात् ॥२२८॥

Whatever seeds one sows, when treated with human flesh and Aṅkola oil with water at the time of sowing, and sprinkled some water over them, they always produce good fruits. (228)

अङ्कोलतैलभावितमुषितं गोशकृति कुमुदकन्दमूलम् ।
करकाम्बुकर्दमभृते कलशे कुसुमं समुद्वहति ॥२२९॥

One should treat the bulbs of water-lily in Aṅkola oil, and keep it in cowdung for some time, and then put it in a water – pot full of hail water and mud, then flowers will surely come out of them. (2290)

गोकोलास्थिकरीषैस्तु दग्धे गर्त्ते विशोधिते ।
उप्तं च वालुकापूर्णे मूलकं गर्तवद्भवेत् ॥२३०॥ 230.

One should purify (treat) a pit with burnt powders of the bone and dung of cow and pig, then fill the pit with sands and sow the seeds of radish in it, and the radish will be as big as the pit. (230)

इष्टकचिते समन्तात्पुरषनिखाते वटे तरुर्जातः
वामन एव हि धत्ते फलकुसुमं सर्वकालमिति ॥२३१॥

If one digs a pit in the ground with bricks all around. 4 1/2 cubits deep, and plants a tree in it (pit), it (the tree) always remains dwarfish and bears flowers and fruits. (231)

ASCERTAINMENT OF THE PRICES AND GROWTH OF THINGS

अथान्नादिनिष्पत्तिज्ञानम् ।

फलकुसुमपत्रवृद्धिं वनस्पतीनां विलोक विज्ञेयम् ।
मुलभत्वं द्रव्याणां निष्पत्तिश्चापि सस्यानाम् ॥२३२॥

One should do well to ascertain the cheapness of things as well as the growth of corns through observation of the growth of leaves and flowers and fruits of trees. **(232)**

न्यग्रेधेन तु यवकास्तिन्दुकवृद्धत्या च षष्टिको भवति ।
अश्वत्थेन ज्ञेया निष्पत्तिः सर्वसस्यानान् ॥२३३॥

One should predict the abundance of barley on seeing the luxurious growth of the leaves and flowers and fruits of Banyan trees, of that of Śāli rice through similar growth in Tinduka trees, and of all kinds of crops through similar growth in Asvattha. **(233)**

जम्बूभिः स्थलमाषाः शिरीषवृद्धत्या च मुद्गनिष्पत्तिः ।
गोधूमाश्च मधूकैर्यववृद्धिः सप्तपर्णेन ॥२३४॥

One should do well to predict the growth of Māsha from the abundance of leaves, flowers and fruits of Jambū tree or Mudga from abundance (of leaves flowers and fruits) of Hastikarṇa tree, of horses from that of Aśvakarṇa, of cows from Pāṭalā trees, and of goats from plantain trees. **(234)**

करिणश्च हस्तिकर्णैर्निर्देश्या वाजीनोश्वकर्णेन ।
गावश्च पाटलाभिः कदलीभिरजाविकं भवति ॥२३५॥

Growth of leaves, flowers and fruits in Mango trees indicates the prosperity of a country, that of Bhallātaka trees indicates various causes of fear, that of Pīlu tree indicates relief from diseases,

and that of Khadira and Sami trees forebodes famine, and that of Arjuna tree abundance of good rain. (235)

आम्रैः क्षेमं भल्लातकैर्भयं पीलुभिस्तथारोग्यम् ।
खदिरशमीभ्यां दुर्भिक्षमर्जुनैः शोभना वृष्टिः ॥२३६॥

Abundance of flowers of Pichumanda and Nāgakeśara trees indicates abundance of corns in a country; that of Kapittha means the chances of storm, that of Vetasa means fear of drought and that of Kuṭaja fear of diseases. (236)

पिचुमन्दनागकुसुमैः सुभिक्षमथ मारुतः कपित्थेन ।
निचुलेनावृष्टिभयं व्याधिभयं भवति कुटजेन ॥२३७॥
(एते नानावृक्षायुर्वेदशास्त्रेभ्यः ॥)

SL. NO.	SANSKRIT NAME	BOTANICAL NAME AND FAMILY	ENGLISH	KANNADA	TAMIL	TELUGU	MALAYALAM
1	Airavata Amlavetas	Citrus Sps. (Rutaceae) or Citrus yetilulata.	Orange	Kittale	Sathagudi, Chini	Battavinarinja	
2	Ajjukam Maruvaka Manjariki	Ocimum basilicum (Labiatae or lamiaceae)		Kama Kasturi	Karpuratulasi	Bhutulasi Rudrajada	
	Akanda	Aalotropis gigantea (Asclepiadaceae)		Ekka			
4	Alabu	Cucurbita Maxima	Pumpkin	Kumbalakai			
5	Alagium Shoedhanam Ankota	Alangium lamarki (Alangeiaceae) Alangiam salvifolium	Sage leaved Alangium	Ankoelae Mara	Ahangi	Ankolame	Chemmaram
6	Aluka	Solanum tuberosum (Solanaceae)	Potato	Alu Batate	Uralakilangu	Bangaladumpa	Urulonkizhangu
7	Amalaka Amalaki Dhatri	Emblica Officinalis (Euphorbiaceae)	Indian Gooseberry	Nalli Nelli	Nellikkai	Amalakamu	Amlakam
8	Amra, Cuta Amra chuta	Mangifera Indica (Anacardiaceae)	Mango	Mavu	Manga Mau	Mamidi, mavi	Amram, Cutam Mavu
9	Amrataka	Spondias mangifera (Anacardiaceae)	Wild mango Hog-plum	Amate Kada amte	Kotamara Kotamara	Adavi mamidi	Kaatambolem Mamupuli

10	Andrapogon Lamajjaka	Andropogon Jwarancusa (Gramineae or poaceae) Recent Name: Cymbopogon Jwarancusa					
11	Apamarga	Achyranthes aspera (Amaranthaceae)	Prickly Chaff flower	Uttarani	Nayurivi	Uttarani	Katalati
12	Aragvada Suvoshaka	Cassia fistula (Calsalpineae)	Indian Laburnum	Kakke	Konrei	Rela	
13	Ardraka	Zingiber Officinale (Zingiberaceae)	Ginger	Hasi shunti	Aallam. Inji		Andrakam
14	Areca	Areca Catechu (Palmae or Arecaceae)	Arecanut	Adke Adaike	Pakku		Adakka
15	Arista Nimba	Melia Azadirachta (Melliaceae)	Persianlilac Bead Tree	Bevu Neema	Malavembu	Turakavepu	Karinvembu Simaveppu
16	Arjuna, Kakubha	Terminalia arjuna (combretaceae)		Arjuna Torematti Holematti	Vellamatta	Yeramaddi	
17	Arka	Calotropis gigantea (Ascelpiaduceye)		Ekka, Ekki Rui			
18	Asana	Terminalia tomentosa (combretaceae) Recent Name: Termilania alatu		Sadada	Karramarda	Tani	
19	Asmantaka	Bryophyllum calycinum (crassulaceae) Recent-Bryophyllum Pinnatum	Sprout leaf Plant	Kadu basale Gayipatha		Simajamudu	

20	Ashoka Nilasoka Raktasoka	Saraca indica (caesalpineae)	Ashoka	Kusge Rakta Pallava Kenkali	Asogam	Asoka Kankeli Vanjulamu	Asokam Hemapushpam Vanjulam
21	Asphota	Jasminum angustifolium (oleaceae)	Wild Jasmina	Kadumallige Nagamallige Vishamallige	Kathumallige	Adavimalli Chirumalli	Kathumalliga
22	Assattho Asvattha	Ficus religiosa (urticaceae)	Peepal	Aswattha Arali	Arasu Aswatham	Ashvathamu Bodhi	Arachu Arayal Asvatham
23	Asvakarna	Shorea robusta (Dipterocarpaceae)	Sal tree	Sala, Kabba	Kungiliyam	Omgal Guggilamu	Maramaram
24	Atasi	Linum Usitatissiumum (Linaceae)	Linseed Agasi	Alivirai	Avisi		
25	Ativala	Sidharhombifolia vari retusa (Malvaceae)		Sahadevi Atibela Bennegaruga	Chitramutti Sirramutti	Atibaiachettu gubatasa	Ankuranthotti Vathuram
26	Atimuktaka	Aganosma caryothyllum (Apocynaceae)		Malati Sumana			
		Hiptage benghalenusis (Malpighiaceae)		Madhavilatha Madhavi Vaisanataduti	Madavi Vasanda galamalligai	Madavitige Vadhayerala	Sitampur
27	Ativisam	Acontium heterophyllum (Ranunculaceae)	Atis Root	Atibaze Ativisa			
28	Babbula	Acacia arabica (Mimosae)		Jali	Karuvele	Nailatumma	Karivelam

29	Bandhujiva Arkavallabha	Pentapetes phoenicea (sterculiaceae) Ixora coccinea (Rubioceae)	Scarlet Ixora	Dupari Bandure Goravi Patakali Bakora	Chetti Kullai Vedchi	Makina chettu Koranam Mankana	Thechi Thetti
30	Banyan (vata) Bahuladu	Ficus bengalensis (moraceae)	Banyan Tree	Ala	al Alam	Mari Peddmarri	Ala Vatam
31	Barley Yava	Hordeum Vulgare (Gramineae)	Barley	Jave Godhi Barley Akki	Barliyarisi	Barlibiyam Yavaka	
32	Bahira Bibhithaka Bayeda	Termination bellerica (Combretaceae)	Belliric Myrobalan	Tare	Tani	Tani	Thani
33	Begonia	Begonia Cordifolia (Begoniaceae)	The Elephant Ear plant	Anekivi Huvu			
34	Betal Nagavalli	Piper betel (piperaceae)	Betel leaf	Veelyada Ele	Vettilai	Tamalapaku	Vettila
35	Poogiphalam (Betelnut) Gubakar	Areca Catechu (Palmae)	Betalnut Palm	Adike Supari	Pakku	Vakka	Adakka
36	Bhallataka	Semecarpus anacardium (Anacardiaeae)	Marking nut Tree or ori- ental cashew	Goddugeru Karigeru	Shen Kottei Erimugi	Bhallataki Jidi	Chera

37	Bharangi	Clerodendron serratum (Verbenaceae)		Gantubarangi	Angaravalli	Gantu Barangi	Cherutekku Kankatharinni
38	Bignonia	Bignonia suaveolens (Bignoniaceae)	Trumpet flower	Amoghe Kachasthali			
39	Bilva	Aegle marmelos (Rutaceae)	Bilva	Bilva Bilvapatre	Vilvam	Maredu	Vilvam
40	(Butea) Kimsuka Palasha	Butea frondosa (Papilionaeae)	Flame of the Forest	Muttuga Muttala	Parasa	Moduga	Palas in Samatha
41	Cactus	Cactus sps (Cactaceae)		Kalligida Kallivarga			
42	Champaka (Magnoliaceae)	Michelia Champaka	Champak	Sampige	Shemburga Chambugam	Champakamu	Champakam
43	Chattra (Mushroon) (Kalakantala)	Agaricus campestris (Agaricaceae)	Mushroom	Nayikode Anabe	Kukkagodugu		
44	Cinca cincini	Tamarindus indica (Cacsalpineae)	Tamarind	Hunise Hunase	Puli Amilam	Chintachette Chintapandu	Puli Amlam
45	Coconut Narikela	Theobroma cacao (Sterculiaceae)	Cocoa tree Chacholate tree	Kokogida	Makkacholam	Mokka-Janna	
46	Cordia Bahuvaraka	Cordia dichotoma (Bonaginaceae)		Challe Chelle kendala	Naruvili	Chinnanakkeru	Viricheruviri
47	Corn	Zea mays (Gramineae)	Indian Corn	Musukina Jola Makka jola	Mukkacholam	Mokka-janna	

48	Cotton	Gossippium arboeum (Malvaceae)	Indian cotton	Hati	Paruthi Panji	Patti	Paruthi Panji
49	Dadima	Punica granatum (Old:Lythraceae New: Punicaceae	Pomegranate	Dalimbe	Madulai	Danimma	Matalam
50	Dahlia	Dahlia variabilis (compositae or Asteraceae)		Dalia			
51	Danti	Baliospermum montamum (Euphorbiaceae)		Nagadanti Danti Kadu Haralu			
52	Darva	Poa Cynosuroides (Gramineae)					
53	Darbha Kusha	Desmostachya bipinnata (Gramineae) or Imperata (cylindrica)	Thatchgrass	Sannadarbehullu	Parbipul	Balbajamu Barhisan	Vidulam
54	Date - (Kasika)	Phoemix dactylifera (plamae)	Date-palm	Karjura Uttatti	Perichchankay	Ita, Kharjuramu	Ittappazham Tenitta
55	Dhava	Anogeissus labifolia (Combretaceae)	Axlewood	Dindal	Vellaynaga	Chirimanu Yellamaddi	Marukinchiram
56	Kuluththa (Dolichose)	Dolichos bifiorus (papilionatae)	Horsegram	Hurali	Kollu	Ulavalu	Muthva Muthera
57	Devadaru	Cedrus deodara (Pinaceae)	Deodar, Himalayan cedar	Devadaru			

58	Chanvayasa Ajabhakshya Dusarsha	Fagonia arabiea (Zygophyllaceae)		Mullumaddu Dhamasa		Chittigara	
59	Dhanyaka	Coriander sativum (Umbelliferae) or (Apiaceae)	Coriander	Kottambari Chaniya	Kothamalli	Dhaniyalu	Kothumpalari
60	Draksa (Vine), Gostan	Vitis Vinifera (Vitaceae)	Grapvine	Drakshi	Kodimundiri Gostarni -Draksha	Draksha	Mundirir Gostani
61	Dugdhika	Euphorbia hirta (Euphorbiaceae)		Acchegida, Nagarajuni Nen Akki soppu	Amampatchaiarisi	Reddinanabrolu Bidarie	Nelapalai
62	Duonura Udumbara	Ficus glomerta (Moraceae)		Attimara	Atti	Attibodda	Atti
63	Ebony	Diosphyros abenum (Efenaceae)	Ebony order	Valimara Tendu, Tumari	Tumbi, Karunkali Toospa	Nallavalludud Karai	Karu, vauari Nalluti, Tumiki
64	Ela Elabata Upakunchika	Alpinia Cardamomum or (Zingiberaceae)	Cardamum	Yelakki	Yelakkai	Yelakyalu	Yelam
65	Eranda, Hastikarna	Ricinus Caommunis (Euphorbiaceae)	Castor	Aralenne gida Harali	Amanakku Kottaimuthu	Amudamuchettu	Avanakku
66	Gajapippali	Scindapsus Officinalis (Araceae)		Dodda-hippali Gaja-hippali	Amaittippili	Enugappippalu Gajapippallu	Amattippili
67	Gambhari	Gmelina arforea (Verbenaceae)		Shivani	Kumadi Umi-thekku	Gumartek Gummadi	Kumbil

68	Garuda-vega	Dalbergia torta (Papilionatae)		Garulaveha			
69	Ghoma	Cyperus rotundus (Cyperaceae)	Nutgrass	Thunga Hullu	Korai	Tungmuste	
70	Girikarnika	Chitoria ternatea (Papilionatea)		Vishnukranthi Aparajithe			
71	Godhuma	Triticum aestivum (Gramineae)	Wheat	Godhi	Godumai	Godhumalu	Gendum, Godamba
72	Goksura	Tribulus terrestris (zygophyllaceae)	Land caltrops Puncture Vine	Sannaneggilu	Nerunji Nerinjeekai	Chinnipalleru	Nerunji Nereenjikai
73	Guduchi Amritaguluchi	Tinospora Cordifolia (Menispermaceae)	Gulancha Tinospora	Amrutaballi	Amudom Chindil	Tippateege	Amryti
74	Gundra	Saccharum Sara (Gramineae)		Kakattu, Thejanaka			
75	Gunja	Abrus Precatorius (papilionatae)	Indian Liquorice Jeguirity	Gulagangi	Gundumani	Guruginia	Kunni
76	Rasagandhi Guggulu	Balsmadendron mukul Commiphora mukul (Burseraceae)	Indian Bedellium Tree	Guggule	Maishak shigukkal	Guggul	
77	Haliddin Haridra	Curcuma longa Curcuma domestica (zingiferaceae)	Turmeric	Arishina Haladi	Manjal	Pasupu	
78	Amragandhar Haridra, Karpura	Curcuma amada (zingiferaceae)	Mango ginger	Mavina shunti	Mangai Inji	Mamidiatham	

79	Haritaki Hassa	Terminalia chebula (Combretaceae)	Chebulic Myrobalan	Alalaekai	Kadikkai	Karakkai	
80	Hingu Bathika	erula asafoetida (unifelliferae or Apiaceae)		Hingu Ingu	Perungayam	Inguva	Perungayam
81	Hintala	Phoenix Paludosa (palmae)				Hintalamee	
82	Hiriveram, Bhutika	Andropogon Cynanthus Syn. Cymbopogon Scoenanthus (Gramineae)	Gingergrass	Majjge Hullu	Suravayi		Shakanarupillu
83	Iksu	Saccharum Officinarum (Gramineae)	Sugarcane	Kabbu Pattikaffu	Poovan Karumbu	Cheruku	Karimfu
84	Indivara	Lilium candidum (liliaceae)	Water lily Blue lily				
85	Ingudi	Balanites aegyptiaca (Simarubaceae)			Nanjunda	Gari	
86	Irimeda	Acacia farnesiana (Mimosae)	Cassie flower	Kasturijali	Kadivel	Kasturituma	Arivelam
87	Jalanili (Green Algoe)	Menters of Chlorophyceae)	(Non-flowers plants)				
88	Jambaki	Eugenia Specis Syzygium Cumini (Myrtaceae)	Jaman Jambolan	Nerale Black plum	Neerdam, Naval	Neereedu	Nawal Perinnaral
89	Jambira (Hindi)	Citrus (Rutaceae)	Lemon	Nimbu Bijapurabijori	Periyayelumichai	Bijapuram	

90	Jambu Jambuka	Eugenia Jambos (Myrtaceae)	Rose-Apple	Pannerala	Perunaval	Jambunereedu	Jambuvam
91	Japa/Jaba Rudrapushpam	Hibiscus rosa-sinensis (malvaceae)	Chinarose	Dasavala	Semparuthi	Javapushpamu Dasana	Chembarathi
92	Jatee	Jasminum grandiflorum (oleaceae) Jasminum Officitole)	White Jasmine	Chameli Sannajaji Mallige Spatikadahum	Manmadafanam Mullai	Jaji Malathi	Pichakam Pichakamulla
93	Jati	Barleria cristata (Acanthaceae)					
94	Jatipatri Jatiphola	Myristica fragrans (thristicaceae)	Nutmeg	Jajikayi	Jajikayi	Jajikayi	Jajikayi
95	Jivanti	Dendrobium (orchideaceae) Desmotrichrem jimbriatum - jivanti (orchidaceae)					
96	Jujube	Ziziyphyns jujuba (Rhamnaceae)	Ber	Bore Hannu	Elandai	Reegu	Elentha
97	(a) Jyotismati Karnasphota (b) Jyotishmati	Cardiospermum halicacabum (Sapindaceae)	Heart seed or Ballon vine	Bekkina Toradina balli	Mudukottan	Buddakakara	
98	Kacchako	Cedrela toona (Meliaceae)	Toon Red cedar	Gandhagarige Mundurike	Santhanavembu	Nandichetty	Malarveppu
99	Kacvi	Arun Sps. Xanthosoma nigrum					Palchembi

		(Araceae)					
100	Kadali	Musa Paradisica (Musaceae)	Banana	Bale, Kela	Vazhai	Arati, anati	Vazha
101	Kadamba	Anthocephalus Cadamba or Anthocephalus indicbes		Kadamba	Vellai - cadamba	Kadambamu	Attutek
102	Kakodumvara	Ficus hispidar (Moraceae)		Kada atti Kaneya atti	Peyatti Sonatti	Badamamidi Brammidi	Erumanakku
103	Kalama - sali	Oryaza sativa - a (gramineae) variety	Paddy Rice	Akki Bhatta	Nellu Arisi	Vadlu Biyyamu	Nellu Ari
104	Kalhara	Ottelai olismoides (Hydrocharitaceae)		Hasiru Neeru Patre		Nir-Veneki	
105	Kamala, Kokamala Kamalini	(Nymphaceae)	Nelumbo nucifera	Lotus	Tavare Thamarai	Ambal Erratamara	Kalung Thamara
106	Kampilla Rampillaka	Mallotus Philliphinensis (Euphorbiaceae)	Kumkum Tree	Kumkuma	Kapil Kungumam	Kunkuma Sinduri	Manjana Kuramadakku
107	Kancana Kancanara	Bauhinia Variegata (Caesaalpineae)		Kanchavala	Segapumanchori		Chuvanna Mandaram
108	Kantakarika Vrihati	Solanum indicum (solnaceae)	Prison Berry		Mulli Karimulli	Tella mulaka Kakamunchi	Cheru Chunda
109	Kantakari Laghu	Solanum Xanthacarpum Solanum surattense (Solanaceae)	Yellow Berried Night shade		Kandonkattiri	Pinnamulaka Nelamulaka Venkauda	Kandankattiri
110	Kanthal Panasa	Artocarpus integrifolia (Moraceae) A heterophylla	Jackfruit Tree	Halasu	Pilapalam	Panasa	Chakka

111	Kapittham	Feronia elephantum (Rutaceae) Feronia limonia	Bale Woodapple	Bela	Vilanga	Velaga	Vila Vilàtti
112	Karamarda Karanja	Pongamia glabra (papilionatae)	Honge Indian Beech	Hònge	Ponga Pongam	Gaanuga	Pungu Punnu
113	Karachi	Harwilliabinata (Caeslpinaceac)	Anjan	Anjaner Kamara	Achacalam	Yepi, Epe, Naraepe	
114	Karavalli	Momordica charantia (Cucurbitaceae)	Bittergourd Carilla Fruit	Hagalakayi	Pakal Pavakka		Kaippa Kaippavalli
115	Karavira	Nerium Odoratum Syn.Nerium indicum (Apocynaceae)	Indian Oleander	Kanagile	Arali	Ganneru Kastooripattelu	
116	Karira	Capparis aphylla (Capparidaceae)		Shiprigida Kariuppi	Sengam	Kariramu	
117	Karkandhu Srigalakoli	Zizyphusoehoplia (Rhamnaceae)	Jackal Jujubė	Sollimullu Paragikanti	Ambulam Suraimullu	Banka Paroogi, paringi	Kottavalli Tutalimullu
118	Karnikara	Hibiscus mutabilis (Malvaceae)	Cotton Rose Confederate Rose	Bettada -Tavare	Sembarattai		Chinnapparatti
119	Karpnraka	Cinnamomum Comphora (Lauraceae)		Karpura	Karpurammu	Karppuram	
120	Kasha	Sacchasum Spontaneum (Gramineae)					
121	Kataka Nirmali	Strychnos Potatorum (Loganiaceae)	Clearing Nut tree	Chilu Chilladabeeja	Tetak kotai Tettrain	Indupache· Chillachettu	Tetranporal

122	Katukarohimi Katuka	Picrorhiza Kurroa (Serophulariaceae)			Katukargani	Katukarogani	Katukarogani
123	Kesara Bakula	Mimosops Elengi (Sapotaceae)	Bullet wood	Pagademara	Vagulam Magadam	Pogada	Elngi Ilanni
124	Ketaki	Pandanus tectorins (Pandanaceae) Padratissimum	Screw Pine	Kedage Tale Huv	Tazhai, Thalay	Mugali Ketaki	Kaida, Tala
125	Khadira	Acacia catechu (Mimosaceae)	Khair	Koghi Kachimamara	Karnagalli	Sandra	
126	Kharjoora	Phoenix dactylifera (Palmae)	Datepalm	Kharjura Uttati	Karchuram	Iba, Kharjuramu	Happzham Tenitta
127	Kimsuka	Butea frondosa (B.monosperma)	Flame of the Forest	Muthuga	Parasa	Moduga	Palas in Samatha
128	Kodrava	Paspalum Scorbiculatum (Gramineae)	Kodomillet	Haraka	Varagu	Arikalu Allu, Arugu	Varagu
129	Kosataka Devadalika	Luffa echinata (Cucurbitaceae)		Visha Heera Jeemoothaka			
130	Kovidara Khairwal	Bauhinia Purpurea (ceesalpineae)		Sarul	Mandari	Kanchanam	Chuvanna Mandaram
131	Ksira Ksirika	Ficus Sps. (Monaceae)					
132	Keshara	Crocus Sativns (Iridaceae)	Saffron	Kesari	Kungumapu	Kunkumapuvu	
133	Kumuda	Nymphae alba (Nymphaeceae)	Water Lily White Lotus	Bili Tavare			

134	Kurantaka	Barleria Prioritis (Acanthaceae)		Mullujaji Mullumandaragi Spatikada Huvu	Shemmuli	Mullugoranta	Shemnuli
135	Kuruvaka Kinkinta	Barliria Cristatar (Acanthaceae)					
136	Kuruvinda	Phaseolus mungo (Vignamungo) Variety Roxburghic (papilionatae)	Blackgram	Uddu	Ulundu	Minumulu	Uzhunnu
137	Kusa	Poa sinsuroides (gramineae)			Kollukattai	Kusa	
138	Kusmanda	Cucurbita Pepo Syn.Benincasahispida (Cucurbitaceae)	Field Pumpkin	Sorekai	Suraikayi		
139	Kustha Kemuka	Costus Speciosus (Zingiferaceae)		Kudige Kemuka	Kuiravam	Chengalvakoshtu	
140	Kusumamandapa	Schleichera trijuga (Sapindaceae) Kusum	Bower Sagadekendala	Kusambi	Puvathipuvam Kodalipulusu	Posuka	Puvam
141	Kusumtha	Corthamus tinctorius (compositae or Asteraceae)	Safflower	Kusume	Sendurakam	Kushumba	
142	Kutaja	Holarrhena Antidysenterica (Apocynaceae)		Setha Kutaja	Veppalei Kodagapalei	Palaa Kodaga	Kodagapala
143	a) Lakuca	Artocarphs lakucha (Moraceae) or Monkey Jak or Lakuch		Vatehuli		Kammaregu	
	b) Mandara	Erythrina indiea		Alavana	Kaliyanamurukku	Badisa	Kalayana

		(Papilionatae)		Harivana		Baridamu	-murikku
144	Lasuna	Allium sativum (Lilaceae)	Garlic	Bellulli Balluli	Vellaipundu	Velluti	Velluli
145	Linseed or Agase	Linum Usitatissimum (Linaceae)	Linseed -Flax	Seeme Agase	Alivitrai	Avisi	
146	Langali	Gloriosa Superba (Liliaceae)	Malabar -Glorylily	Agrusikhe	Kalaippaaik -Kishangee	Adavinabhi Ganjeri	Medoni Malluttamara
147	Lavanga	Syzygium aromaticum (Myrtaceae)	Clove	Lavanga	Kirambu	Lavangamulu	Karayampu
148	Lodhra Marjaha	Symplocos racemosa (Symplocaceae)		Balaaloddu Oginamara	Velli-lethi	Lodduga	Pachotti
149	Madyantika Mallika	Jasminum Sambac (Oleaceae)	Arabian Jasmine or Inscan Jasmine	Elusuttu Mallige Sujimallige	Adukkumalli	Boddumalle Gundumalle	Cherupichakam
150	Madhavi	Hiptage madablota (Malpighiaceae) Hiptage benghalensis See 25 (b)		Madhavi latha Madhu malathi	Madhavi	Madhavi Tige	Siitampu
151	Madhuka	Madhuka longifolia (Sapotaceae)	South India Mawabutter Tree	Hippe Mahua,	Illupei	Ippa Elupaa	Poonam Ilupa
152	Manjishtha	Rubia Cordifolia (Rubiaceae)	Indian Madder	Siomalathe Siragatti	Shevelli Manjitti	Taamaravalli	Poont Manjetti
153	Maruvaka	Oocimum basilicum (Laboratae or Lamaceae)	Sweet Basil Common Basil	Naayi Tulasi Kamakasthuri	Tirnirupachai	Bhutulasi	

154	Masha See 136 (Vigna mungo)	Phaseolus mungo (Papilionatae)	Blackgram	Uddu	Ulundu	Minumulu	Uzhnnu
155	Masaparha Masaharni	Glycine debilis Terammnu labialis (Papilionatal)			(Kattualandu)		
156	Matulanga	Citrus medica (Rutaceae)	Citron	Madala Madavala	Kadaranarathai	Lungamu	Gilam, Rusakam
157	Methika	Trigonella foenum-raceum (papilionatae)	Fenugreek	Menthe Menthya	Vendayam	Mentulu	Uluva Venthiam
158	Mudga Muga	Phaseolus radiotus (Papilionetae)	Greengram Goldengram	Hesaru	Pasipayasu	Uthulu, Patchapesalu	Cherupayaru
159	Murva	Sansevieria roxburghianae (liliaceae)	Indian Bowstring Hemp	Goddumanji	Marul, Mottaman	Niyanda	
160	Musakarni	Merremia emarginata (convolvulaceae)			Elikathu keerai	Elika, jemudu	
161	Musta Mustaka	Cyperus rotundus (Cyperaceae)	Nutgrass	Tungegadde	Korai	Tungamusta	
162	Mustard (Surshapa)	Brassiea nigra Syn.Brassio Campestris (Brassiceae)	Black or True Mustard	Sasive variety	Siru-kadugu	Nallaavaalu	Katuka
163	Naga Kesara Naga Kusuma	Mesua ferrea (Guttiferae)		Nagasampige Nagakesara	Nangu Nangal	Nagachampakumu	Nanga, Per
164	Naktamala	Caelsalpinia bonducella	Fevernut or	Gajagakai		Kazhichikay	Kazanchikuru

		(Caesalpineae) C.Crista	Bonducnut				
165	Nala	Phragmites maxima (Gramineae)		Hulugilu	Perunanal	Nagasvaramu	Nalam, Nannana
166	Nigrodha Nyagrodha	Ficus bengalensis (Moraceae)	Banyan	Ala Aladamara	Al, Alam	Marri, Peddamarri	Ala, Vatam
167	Nipa	Nauclea Kadamba (Rubiaceae)		Hole Halasu Ubalu			
168	Nili Kalakutaka	Indigofera articulata (Papitionatae)	Surat Indigo Wild India Arabian Indigo	Kadu Nili	Kataveri	Karunili	
169	Nisa	Curcuma aromatica (Zingiberaceae)	Wild Turmeric	Vana Haridra Kasturi Arishina	Kasturi Manjal	Kasturi Pasupu	
170	Nirgundi Nirgunda	Vitex negundo (Verbenaceae)		Lakkingida Nakkilu Nekki	Vellainocohi Nirkkundi	Vaavilu	Vellanocchi
171	Padmaka	Prunus Cerasoides (Rosaceae)	Himalayan Wilecherry				
172	Palandu	Allium Cepa (Liliaceae)	Onion	Erulli Nerulli, Ullagadde	Vengayam	Nirulli Ulligaddalu	Chuvannaulli
173	Palasha	Butea frondosa (Papilionatae)	See sl.No. 40				
174	Paravata	Annona reticulata (Annomaceae)	Bullocks Heart	Ramaphala			

175	Parijatha	Nyctanthes arbortristis (Oleaceae)	Night Jasmine	Parijatha Harasingara	Manjhapu	Pagadamalle Parijathamu Kapilanagadustu	Pavizhamalli
176	Purusaka (Parooshaka)	Grewia asiatica (Tiliaceae) G.Subinaequalis		Buttiyudippe Tadasala	Palisa Tadachi	Jana, Nallajana Phutiki	
177	Patala Patali	Stereospermum Suaveolens (Bignoniaceae)		Hudayabilla	Padri	Gaddalipulusu Kalgora Kuferakshi	
178	Patola Putulika	Trichosanthesdioica (Cucurbitaceae)	Pointed gourd	Kaadupadavala	Kombupudalai	Kommupotla	Patolam
179	Patra	Laurus cassia (lauraceae)					
180	Patanga Kuchandana	Alenanthera pavonia	Redwood	Anegylganji	Anikundumani	Bandiguruvenda	Manjagi
181	Pilakkho, Plaksa Pippala	(Moraceae)	Ficus religiosa	Peepal	Arali, Aswattha Aswattham	Arasu, Bodhi	Ashwathamu,
182	Pilu	Salvadora indica Salvadora persica (Salvadoraceae)	Toothbrush Tree or Mustard tree	Govinamara Gonimara	Kalawa, Karkol	Ghunia, Varagogu	
183	Pindara Pindira	Punica granatum (Punicaceae)	Pomegranate	Dalimbe	Madulai	Danimma	Matalam
184	Pippali	Piper longum	Indian	Hippali	Tippali	Pippuloo	Tippali

		(Piperaceal)	Long pepper	Tippali (See Sl.No.23)	Sirumulam		Pippalimagodhi
185	Asvakarna	Shorea sps (Dipterocarpaceae)					
186	Piyala Priyala	Buchanania Lanzan (Anacardiaceae)	Almondette Tree Cheronjee	Huimaralu Nurkal	Morala	Sara	Mungapera
187	Priyangu	Agalaia roxburghiana (Meliaceae)		Tottilakayimara Tottilamara			
188	Pterospermum (Kanakachampa)	Pterospermum acerifolium (Sterculiaceae)				Matsakanda	
188 (B)	Pitasara	Pterocarcus marsupium (Papilionatae)	Indian Kinotree Malabar Kino tree	Honne	Vengai	Yegi, Peddagi	Venga
189	Punnaga	Calophyllum inophyllum (Guttiferae)	Alexabdrian Leurel or Pinnay Oil tree	Surahonne	Punnai, Pinnay	Pouna	Pouna
190	Rajakosathaki	Luffa acutangula Variety; amara (Cucurbitaceal)	A variety of Ridgegourd or Riffedgourd	Kaduheere, Heerekai	Pirkankai	Birakaya	Pichenga
191	Rajani Rangapatri	Indigofera tinctoria (Papilionatae)	Common Indigo	Nili	Nili	Aviri Nili	Nilam
192	Rasna	Pluchea lanceolata (Asteraceae) Leaves or Saccolabium- papillosum (orchibaceae)	Saccolalbium	Papillosum	Orchilaceae		

193	Raktotpala	Nymphale rubra N.nounchali (Nymphaeaceae)	Indian Red Water Lily	Nyadale Huvu	Allitamarai Vellambal	Allitumara Tella Kalava	Periambal Neerambal
194	Rohitaka	Tecomella Undulata (Bignoniaceae)	Rohida Tree				
195	Saka	Tectona grandis (verbenaceae)	Teak	Thega			
196	Sala Asvakarna	Shorea robusta (Dipterocarpaceae)	Sal	Kabba	Kungiliyam	Gugai Guggilamu	Maramaram
197	Sallaki	Boswellai Serrata (Burseraceae)	Indian Olibanum Tree	Lobana	Parangisambrani	Parangisambrani	Parangisambrani
198	Salmali	Bombax malabaricum (Bombaeaceae)	Red silk Cotton Tree	Booraga	Mulliviavu	Booruga	Mullilavie
199	Sami	Prosoopis Spicigera (Mimosae) P.Cineraria		Kabanni Perumbe	Perumbay Jambu	Jammichettu	Parampu
200	Sana	Crotalaria Juncea (Papilionatae)	Sun-hemp	Senabu	Sannappu	Janamu	Wuckoonar
201	Sugandhika, Chandan (Sandal)	Santalum album (Santalaceae)	Sandalwood	Sreegandha	Sandanam Ullocidam	Chandanamu	Chandanam
202	Sankhapushpa	Conscora decurrens C.deccusta (Gentianaceae)	Hemp	Shankha Pushpa			
203	Santana	Polythia longifolia (Annonaceae)	Indian Mast Tree	Putrajivi	Nettilingam	Naramamidi	Asanachorana

204	Sarala	Pinus roxburghii (Pinaceae) gymnorperm	Chirpine	Turpentine Gida			
205	Sariva	Hemidesmus indicus (Asclepiadaceae)	Country Sarsaparilla	Sogade Beru	Nannari	Sugandhipala	Naruminti
206	Sarsapa	Brassica Campestris BRapa (Brassicaceae)	Mustard	Sasive	Sasivelu		
207	Saugandhika	Plumeria alba (Apocynaceae)	White champa	Bili Deva Kanagalu	Perumalarali	Veyvivarahaalu	Vellachampakam
208	Sephalika Parijatha	Nyctanthes arbotristis (Oleaceae)	Night Jasmine Coral Jasmine	Parijatha	Manjhapu	Pagadamalle Parijathamu	Parizhamalli Parijathakam
209	Sesma (Ellu)	Sesamum indicum (Pedaliaceae)	Gingelly Sesame	Ellu	Ellu	Nugulu	Karuthellu
210	Simsapa	Dalbergia Sissoo (Papilionatae)	Sissu	Sissu,Mara	Sisuitti	Errasissu	Iruvil
211	Sindhuvara Surasa	Vitex trifolia (Verbenaceae)		Nochi	Nirnochi Sirunochi	Vaavilu Chiruvaavili	Karinochi Nirnochi
212	Signiveram Vaharadraka	Zingifer cossumunor (Zingiferaceae)	Wild ginger	Kadu Shunti		Karraallamu	
213	Sirisa Shirisha	Albizzia lebbeck (Mimosae)	Siris East Indian walnut	Begemara	Vagei	Dirasana	Vaga
214	Slesmantaka Ba[illegible]varaka	Cordia diachotoma (Boraginaceae)		Challe Hannina -mara	See SlNo.46		
215	Sor[illegible]valkya Babbula	Acacia arabica (Minosae)		jali	Sl.No.28		

216	Soma Somavela	Sarcostemma acidum (Asclepiadaceae)		Hambukalli Somalthe		Kondapala Somalatha	
217	Sovanjana	Moringa Oleifera (Moringaceae)	Drumstick tree Horse Radish Tree	Nuggekayi	Murungai	Mulaga Munaga	Murinna Sigru
218	Sthalapadma Karnikara	Hibiscus mutabilis (Malvaceae)	The changeable Rose	Kempu -Suryakanthi	See Sl.No.118		
129	Sukarika	Mimosa Pudica (Mimoosae)	Touch-me-not	Muttidare muni	Tottalavadi	Attapatti	Tintarmani
220	Suryavali	Gynandropsis Pentaphylla G.Gynandra (Capparidaceae)		Sreekala Tiloni	Kattakodagu	Vaminta Vainter	Karavela Taiwela
221	Svarnapushpa	Cassia fistual (Caesalpineae)	Golden shower Indian Laburnum	Kakke	Konnei	Rela	
222	Syama	Echinochloa frumentacea (Poaceae)	Japanese Barnyard Millet	Samai Savai	Kudraivalipillu	Bontashama	
223	Symalatha Sariva	Ichnocarpus frutercers (Apocynaceae)		Karehambu Gorwiballi	Paravalli Udargodi	Illukatte Nalateage	Paalvally
224	a) Tagara Nandivriksha	Ervatamia divaricater (Apocynaceae) Or	Indian valerian	Nandyavarta			
	b) Tagara	Valeriana Wallichii (Valerianaceae) Or					
	c) Tagara	Bignomia Chelonoides					

		(Bignomiaceae)					
225	Tala Tali	Borassus flabellifer (Palmae)	Palmyra Palm	Tale or Olegida	Panai	Tadichettu	Pana
226	Tamala Tejapatra	Cinnamomum tamala (Lauraceae)	India cassia Lignea		Talishappattiri	Talisapatri	
227	Tarkari	Aerchynomene sesban (Papilonetae)					
228	Trivrita (Trivrita)	Operaculina turpethum (Convolvulaceae)		BiliTigade	Shivadai Kumfam	Tellategada	Chivaka Rochani
229	Twak	Cinnamomum Zeylanicum (Lauraceae)	Cinnamon	Dalchinni	Cannalavanga -Pattai	Dalchini	
230	Tinduka Tinduki	Diospyros embryopteris (Ebenaceae) D.Peregrina	Gaubpersimmon	Holetupra	Kattatti Kavikottai	Tinduki Gobu	Panachi Vananji
231	Udumbara	Ficus glomerata (Moraceae)	See Sl.No.62				
232	Usina Ushira, Virana	Vetivera Zizanioides (Graminae)	Vetiver Khus-Khus	Laamanche	Vettiver	Kusuveeru	Ramaccham
233	Vacha	Acorus calamus (Aroideae) (Araceae)	Sweet flag	Baje Bhutanasini	Vasambu	Vasa	Vavambu
234	Vadari	Zizyphus Jujuba (Rhanmaceae)	Jujub Tree	Bore Hanninamara			
236	Vanaharidra	Curcuma aromatica (Zingiberaceae)	Wild Turmeric	Kasturi Yellow Zedoary	Kasturimanjal Arishina	Kasturi pasupu	

237	Vansha	Bambusa arundinacea (Gramineae)	Thorny Bamboo	Biduru	Mungil	Bonguveduru	Mungil
238	Vanira	Calamus roxburghi (Plamae) (Arecaceae)					
239	Vanjula Vetra	Calamus rotang (Plamae) (Arecaceae)	Ratancane	Halubettha Nagabettha	Perambu	Pemu	
240	Variparni	Pistia stratiotes (Araceae)	Water soldier or water cabbage	Antaragange	Akasatamarai	Antharaidhaman	Akasatamara
241	Vartaku	Solanum melongena (Solanaceae)	Egg-plant Brinjal	Badanekayi			
242	Varuna	Crataeva nurvala (Capparidaceae)			Maralingam		
243	Vasaka	Adhatoda Vasica (Acanthaceae)		Adusoge	Adadodai	Adasaramu	Atolotakam
244	Vastuka	Chenopodium album (Chenopodiaceae)	Lamb's Quarters	Hicchu -Chakkota	Pasupukura		
245	Vetasa	Calamus Viminalis Syn.C.fascicultus (Palmae)	Water reed	Neeruhabbe	Parambu	Pemu	Perambu
246	Vetula	Calamus Sps. (Palmae)					
247	Vidanga	Embelia ribes (Myssinaceae)		Darakanhi	Vayuvilanga	Vayuvilanga	Vizhal
248	Vrhati	Solanum indicum	Poison Berry	Kempugulla	Mulli	Tellamulaka	Cheruchunda

		(Solanaceae)		Heggalagida	Papparamulli	Kakamunchi	
249	Vishamushti	Strychnos nux-vomica (Loganiaaceae)	Snakewood Nux-vomica Strychninetree	Hemmush Kanjira	Etti Kagodi	Mushti Muchidi	Kanjiram
250	Breehi Vrihi	Oryza sativa (Gramineae)	Paddy	Batta	Nellu Arisi	Vadlu Biyyamu	Nellur Ari
251	Yava	Hordeum Vulgare (Gramineae)	Barley	Javegodhi	See Sl.No.31		
252	Yajnadumura	Fiens glomerata (Moraceae)		Atti	See Sl.No.62		
253	Yavinkaa	Trachyspermum ammi (Umbelliferae or Apiaceae)	Carum, A.jowan	Oma, Omakki	Omum, Omam	Vaanu	Omam
254	Yasthimadhu	Glycyrtrihiza glabra (leguminasai)	Liquoricee Licorice	Atimadhura Durlava	Atimaduram	Yashtimadukam	Iratimaduram
255	Yavasa Yaveka	Alhagi maurorum	Mannaplant	Nelaingalasa		Girkarmika	
256	Sreemudre Atibala	Abutilon indicum (malvaceae)	Country Mallow	Mudregida Sreemudra	Paniyarattutti	Tutturafenda	Vell[illegible]
257	Jivantika	Viscum articulatum (Viscaceae)					

The Kalpatharu Research Academy established in 1981, was inagurated by the then Minister for Tourism and Civil Aviation, Government of India. This is an institution dedicated to the cause of the Preservation of heritage in India. Its broad aim is to promote research-oriented scholarship in the different branches of knowledge relating to the Vedas and Sanskrit. Encouragement is meant to be given through the Academy to the study of the Vedic literature along with traditional Angas, such as Jyotisha, Kalpa, Nirukta and Vyākarana. It also promotes work in related disciplines; Manuscriptology, Etymology, Linguistic Sciences, Lexicology and Literary Criticism. Generally, the Academy will help spread and promote education, culture, science, art and learning in all its branches. It will be broad-based and multi disciplinary in approach.

In order to further its main objective to encourage studies in the field of Veda and Vedānga, various Research projects have been taken up and also major Research work on Rigveda and Āgama-Kosha in several volumes. A reference library is being built up to assist the research work by the scholars engaged by the Academy and also students in Vedic studies. It is the intention of the Academy to develop as a National Centre for higher learning in Vedas and facilitate the founding of a Sanskrit and Vedic University in India.

This publications is the Thirty Third of its achievements in this field.

THE KALPATHARU RESEARCH ACADEMY
BANGALORE